THE

HORTICULTURIST.

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Hints on Pear Culture.—I.

WE have already intimated that we purposed devoting a portion of our space to the cultivation of the pear. There are many among our readers who make the pear, especially as dwarfed on the quince, an object of special attention. There are many more who are for the first time turning their attention to it, who need and ask for information in regard to its culture, and it is a part of our duty to satisfy their needs as far as we can. This we propose to do in a plain, practical manner, so as to give our remarks a real value. As in our Hints on Grape Culture, we shall give simply the results of our own experience, describing the various operations and manipulations just as we have been in the habit of doing them. In this way, we may perhaps make plain to the reader some particular points of culture which he has failed to understand from the writings of others. The chief reason why some books on horticultural subjects are obscure, and give an "uncertain sound," consists in the fact that the writers, having little or no experience of their own to rely upon, cull that of others without the ability to discriminate between right and wrong practice. Others, lacking self-confidence, prefer to give the experience of others to their own. Hence it often happens that some little, unpretending book, giving the writer's own experience in a plain way, contains stores of useful knowledge sought for in vain in its more pretentious rivals. Very few men have the ability to describe lucidly the practice and opinions of others; indeed, a man is very happy if he is able to explain clearly to others in writing even his own experience; it is a gift vouchsafed to but few. It is plain to be seen, therefore, why many books fail to be valuable to the novice who has every thing to learn. Success would, undoubtedly, be greater if each writer would confine himself mainly to his own experi-

ence when writing on practical subjects; if he has no experience, then he is clearly the man to keep profoundly silent, and learn, instead of wasting precious time in attempting to learn others. But even though some good books may be found on a given subject, that is no reason why others should not be written; because very few men will be equally well understood by all; and, in addition to this, there are differences in practice and constant improvements in the details of culture, which make new books indispensable to a fair record of the progress of the age. If this were not so, the press would find little to do. Arguments of this kind might be greatly multiplied; but they are not necessary for any purpose we have in view at present. It is sufficient for us that our readers want knowledge of any kind, to determine us to furnish it to the best of our ability, without stopping to ask whether they can find it elsewhere. The hope of obtaining such knowledge is their chief inducement for subscribing for any periodical.

Then, again, pear culture is an important part of the productive industry of the country, and requires all the encouragement we or any body else can give it. While it is a source of profit to those who pursue it, it is equally a source of health and gratification to the community at large. It is true that the profit of pear culture has been questioned by some, but, in our opinion, without any sufficient reason, as we hope to be able to show. We have no doubt at all that it is, when properly pursued, among the most remunerative branches of horticulture. That all have not succeeded, or succeeded as well as they might, is not to be denied; but their want of success may easily be traced to its proper source. If, in any thing we may say, we may be able to make pear culture plain to the understanding of even a few of the many who are seeking to learn, we shall have no cause to regret the time and labor devoted to the subject.

We purpose treating of the pear as a standard, as a dwarf, and as grown in pots. Beginning with the tree at the bud, we shall follow it to full maturity. These articles will occasionally alternate with those on the grape.

LANDSCAPE ADORNMENT. No. XXVI. — ROADS, No. 5.

BY GEO. E. WOODWARD,

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HANDSOMELY located, regularly graded, and well-constructed roads are chief among the attractions of a fine country place, and constitute one of its most effective improvements. When well done, they are done for all time, and afford a degree of satisfaction which no inferior work will compensate for.

It is highly important, in making ornamental roads, that its principal points of beauty should be well developed, as in the mere matter of construction the expense

would not differ on an ill-chosen line awkwardly laid out, and one that embraces all the good points the ground will admit of.

The nice adjustment of curves and the regular distribution of grades give an artistic polish that is wonderful in effect, and surprising even to those who are not novices in such matters, but who have not seen the beautiful results of engineering skill. To know precisely the position, the direction, the grade, the amount of earth work, and the cost of an ornamental road, before a shovel enters the ground, is always desirable to one who sets about making improvements in a business-like manner; and as he can know thoroughly all these things in advance, *if he has a wish to know them*, the opportunity is afforded to make every change that taste or means would suggest, without the necessity of doing the work over twice, or trying experiments in moving earth to find that which is most beautiful. The results of engineering practice are of the most absolute character, and what a road shall be in every respect, in use, in appearance, etc., is thoroughly known to him without the necessity of moving a sod; and however impracticable his work, when laid out, may appear to an inexperienced eye, it does not fail in its final finish to give the most gratifying results. Some of the most pleasing portions of our practice in road building has been in the very agreeable disappointments produced by fulfilling every promise we have made relating to the final effect, beauty, and expense, when, during the process of construction, all appearances were against us.

What is true in road building is equally true in other departments of landscape art, which, if properly and judiciously planned and studied in advance, would obviate not only the almost certain blunders that are made, but the heavy expense attending them. It is no uncommon thing for one who proposes to spend $10,000 in embellishing his country home, to end with an expenditure of $30,000; and he who means to go as far as $30,000 spends perhaps $30,000 more, and "then comes to himself, and confesses the hobby is over;" so many mistakes, so much wasted money and time, that it becomes disagreeable to contemplate.

There is no economy whatever in doing any thing in a cheap manner; "what ever is worth doing at all, is worth doing well," and it is better to progress slowly and surely than to execute improvements imperfectly. A judicious choice in making the principal roads on a country estate pretending to display evidences of refined taste, would not stop short of first class workmanship and material, because a well-made road does not require that expense in annual repair, is easily kept in fine order, free from weeds, and is always a source of gratification to the owner. Those who do not place much importance upon a neat appearance, or wish to go beyond the truly practical, can not appreciate the pleasing impressions to be made by a finely graded, hard, smooth, handsome drive. Nothing else should be tolerated in a place of any pretension. The graduation and alignment of roads of all classes should be carefully studied, as all the principal points

of their attractiveness, except in surface and keeping, are embraced in their direction and rate of ascent and descent.

The construction of a first class roadway is the same whether the alignment and grades be handsomely and artistically adjusted or not; and if these be well done, there is an added beauty that no elaboration of surface or care in keeping will compensate for.

It is quite necessary in some sections where stone or other road materials are scarce, or where close economy must be studied, that the road bed should be entirely on the earth, and the inconveniences and untidiness of soft and muddy roads submitted to. Thorough drainage will in many cases remedy to a great extent such evils, although it can never entirely alleviate them. All roads of whatever character, passing over ground naturally wet or retentive of moisture, should be thoroughly underdrained; this is one of the vital principles of successful road-making, and the money and time devoted to such purpose can never be reckoned as misspent.

From a natural earth road we can advance through all degrees of covering until we reach that which fifty years' experience shows to be the best. We can improve the surface of an earth road, if it be clay, by laying on sand; of a sand road, by laying on clay. We can use coal ashes, wood ashes, and charcoal to advantage; scoria, furnace slag, and the different classes of gravel. Then we can advance still higher in the scale of excellence, and make use of different methods of making stone roads. We can get rid of money pretty freely by adopting the common home-made plan of making roads of boulders and field stone dumped into a ditch eighteen inches to three feet in depth, and flatter ourselves at the same time that we have got rid of the stone. We can hand-pack fractured field stone to a foot in depth, cover the same abundantly with gravel, and get a good and expensive road. We can use the irregular size spawls or chippings from quarries, more particularly those found where the New York Belgian pavement is quarried; and these, covered with gravel or other good binding material, will make a good road; or the so-called gravel obtained from the limestone quarries on the Hudson makes a good covering by itself, if the larger pieces be raked to the bottom; and as a binding and finishing material over a course of evenly broken stone, is for an ornamental road on a private estate one of the most beautiful and desirable that we have met with. The class of road above all others that fulfils all conditions of excellence combined with a true system of economy, is a modification of the McAdam system. This consists in placing upon a properly prepared road-bed broken stone of an average size of two and a quarter inches cube, to a depth not exceeding six inches; then rolling the same thoroughly with a heavy roller, in such a manner that the single stones can not be detached or picked up; over this, as a binding material, and for the purpose of giving at once a smooth finish, put from one to two inches of gravel, which must also be well rolled, and is best done after a good rain.

The advantages of building a road in this manner are as follows: the earth excavation is very much reduced, as the total thickness of the road metal and binding need not exceed eight inches, and may be of no greater depth than six inches; the least possible amount of stone is used, which is desirable where stone is not plenty, and where stone is abundant there are cheaper modes of disposing of it than burying it in road beds. The stones being all of equal size, none will work up, as is the case where stone of different size are used; the stone being fractured and angular, finally unite and become a compact, impenetrable body. It improves by age and use, becoming better as years go by; less weeds grow in it, and it requires less labor to keep it in first class-order. It can not wash on steep grades, and if properly made it is impossible for surface water to gully it; frost can not affect it, as its action is distributed uniformly on a mass composed of hundreds of smaller particles, each one of which yields slightly. The use of the roller in the spring is an effectual remedy for the action of frost on a road of this character. It costs less money to build a road in this manner than to build a first-class, substantial road in any other way. It is the simplest form of road to build, the specifications for which can be easily understood. It has been tested for a long series of years, and under all conditions of use and exposure. We have adopted this plan for several years where first-class work was desired, and with the most gratifying success. One experimental road built four years ago, the total thickness of broken stone and gravel being but five inches, has, with constant use, remained in all seasons firm, dry, and smooth, and the cost of keeping it in polished order has been literally nothing. We have just finished two roads on the Hudson, upwards of 1,600 feet long, having a layer of broken stone of uniform size, two and a quarter inches cube, and six inches in thickness, covered with a layer of the Haverstraw limestone gravel one and a half inch to two inches thick. We can safely say, in the very extensive range of our experience, that, outside of the Central Park, there are no ornamental roads possessing so many strictly first class principles—hard, smooth, durable, beautiful, and economical.

WESTERN PRAIRIES.

BY B. A., PASSAIC, N. J.

Why are they not forests?

I have not seen as much of the prairies, as appears to have been the case with the correspondent in your August number. But I have drawn certain conclusions from my limited knowledge that may be worth printing.

There is a remarkable stratum of sand underlying the limestone rock, and extending over a large district on the Upper Mississippi. In this sand is the remarkable cave near St. Paul, Min. The largest chamber I estimated to be 70 x 40, and

18 feet high, oval in plan, and arched like a tortoise shell. It has so little tenacity that sand swallows build their nests in it. It is readily detached by the finger nail, when it resembles sea sand. But it approaches so nearly to sand-stone rock, that it supports itself in the form of an arched roof in this cave. The same stratum is found at Fort Snelling. At the falls of Minnehaha it is worn away under the projecting rock, so as to form a gallery under the falls from side to side. It is found under the rocky cap at the conical hill called "The Lone Mound," in Wabashaw County, Min., and thence dug out for making mortar. It is said to be found under the rock when digging wells at Janesville, Wis. I suppose that it can be found any where in this district along the bluffs.

The geological position of the prairie about Fort Snelling, and the Falls of St. Anthony, etc., is above the upper limestone rock. The prairie in the valley of the Zumbaro, in Wabashaw Co., Min., is below the upper limestone rock. This valley is several miles in width. The soil when wet resembles black city mud. The earth is composed of much lime mixed with other drift. It is based on magnesian limestone. The few trees have large roots and small stems. The bluffs have full size trees in abundance.

I infer, that the rank vegetation on these prairies, when fired, destroys the trees, while that on the bluffs only prunes them, as there is not sufficient for destruction.

Thus, the early German settlers in the Lebanon valley, Pa., chose the gravel land on account of the timber, because in their fatherland, timber was very valuable. The limestone land adjoining and running parallel, was a treeless prairie. The relative fertility may be judged by subsequent prices. The gravel land some years since sold for about $35, while the limestone land sold for $100 to $120 per acre.

Thus, also, about forty years since, an extensive white cedar woods on the Newark meadows was destroyed by fire, and now there remains nothing but a treeless prairie.

Hence I infer that the absence of trees in these cases indicates excessive fertility. But we must not thence infer that "prairie," although French for *meadow*, is synonymous with fertility; for as used at the west, it simply signifies "treeless,' and this at times arises from want of fertility. Thus on the railroad route from Madison to Prairie du Chien, there is a sand prairie of small extent, where the superincumbent limestone appears to have been washed away, leaving the substratum of sand exposed, in places, without mixture with fertilizing ingredients; and the vegetation is not greater than near the sea-shore. So, also, in the fertile rolling prairies, small hillocks are found with scanty vegetation.

It is also stated that there are large districts in the neighborhood of the Rocky Mountains, that are without trees, and almost without vegetation, in consequence of the excess of alkaline salts.

But in some of the level prairies, such as those surrounding Chicago, the absence of trees is probably due to fire, since there are some trees that will grow almost

in the water, and I judge that these prairies are less wet than the cedar swamps on the Newark meadows, and other cases of beech wood.

[Any facts pertaining to the prairies can not fail to be interesting. B. A. has examined them geologically, and we are obliged to him for some of his valuable reminiscences. We attach much value to them, and should be glad to have more of them.—Ed.]

VENTILATION OF GRAPERIES.

BY J. S. HOUGHTON, M. D., PHILADELPHIA.

The necessity of more constant and perfect ventilation in houses devoted to the cultivation of the vine, has of late commanded the attention of some of our most skillful grape-growers, and has led to some improvements in the construction of vineries, which will no doubt be of great service to gardeners. In England, where the atmosphere generally contains much moisture, very free ventilation has always been given to vineries in moderate weather; but in this country, where we have much hot, dry wind, we have been compelled to sacrifice our ventilation in order to retain the moisture in our grape-houses, often, no doubt, to the great injury of our vines.

The object of the present article is merely to call the attention of grape-growers to the scientific reasons which demand more constant and perfect ventilation than is ordinarily given to American graperies, and to suggest some means of accomplishing this object.

It is well known that leaves absorb from their under surfaces, and transpire or evaporate from their upper surfaces. Now, in a house which is not provided with sufficient ventilation, by a gentle current of fresh air passing through the vinery, and where a moist, heavy atmosphere is maintained, the function of transpiration from the upper surfaces of the leaves must be, in a great measure, impeded, and hence engorgement of their tissues must take place. If the border be moist, the sap will rise with great rapidity and force, and the effete fluid matter, which ought to pass off by transpiration, must pass very slowly, if at all, to the serious injury of the foliage.

Again, the pure natural atmosphere was made for plants as well as man, and any great adulteration or change of its chemical constituents, renders it poisonous to vegetable as well as animal life.

Plants, by their leaves, absorb carbonic acid gas, and discharge oxygen; but although carbonic acid is the natural food of plants, they can not exist in the presence of an unusually large proportion of it, any more than man, who delights in

oxygen, can endure a very great increase of that gas in the atmosphere without injury, or even the destruction of life. Carbonic acid gas benefits plants only when it does not exceed one-twelfth the bulk of the atmosphere, though one-twenty-fifth is a still more favorable preparation.

In vineries, early in the spring, when little ventilation is permitted, is it not probable that chemical changes in the atmosphere, very injurious to the vines, are often produced by unthinking gardeners, who take little heed of the great natural laws above-mentioned? The inside portions of vine borders frequently contain large quantities of carbonaceous matter in a state of decomposition, giving off carbonic acid gas with great freedom, and loading the unchanged atmosphere with a poisonous proportion of that gas in a few hours. Sulphurous acid gas and ammonia, which are also often given off from the composts used in graperies, are equally as destructive to plant life, when in excess, as carbonic acid.

Oxygen gas, in large proportion in the atmosphere, is also highly injurious to plants. The change of color, which is seen in ripening leaves in autumn, is said to be due to the absorption of an excess of oxygen.

Hence it has been set down as an axiom in horticulture, that, other circumstances being favorable, those plants are always the most vigorous and healthy which have the most liberal supply of pure natural air.

Another remarkable fact in the physiology and chemistry of plants is this: that flowers and fruits, *unlike leaves*, absorb oxygen and give out carbonic acid quite freely, at all periods of their existence. Leaves, it will be recollected, as a general law, absorb carbonic acid and emit oxygen. The action of flowers and fruit, it will be seen, is just the reverse. In ripening fruit, especially, carbonic acid is very freely given out, while oxygen is absorbed; this is the case even in, fruit plucked from the tree while it is yet unripe.

These operations of nature are so delicate and complicated that man can not hope to imitate or regulate them, in an atmosphere of his own creating; and hence it follows, that only by free and constant ventilation can we supply to the vines that perfect and healthful atmosphere which has been provided for them.

But how shall we be able to supply a constant current of fresh air to our vineries, without too great a loss of interior moisture and danger of mildew? I answer, that some of the most successful vineries I have ever seen were very rude structures, the sides being constructed of loose boards, with numerous crevices for the admission of bottom air, and much ventilation had been given, by *accident*. In England, at the present time, great efforts are being made to introduce into vineries constant currents of fresh, warm air, by passing the air over heated surfaces. In this country, the suggestion has been made by Mr. Saunders and others, that constant top ventilation may be given in quite cool weather, day and night, without danger, and that front or bottom ventilation may be given by covering the ventilators with coarse flannel, or loose woolen cloth, which, if kept constantly wet, would be all the better, admitting a steady supply of fresh air, and promot-

ing ventilation without creating any injurious draught or currents of air. The practical application of the principles stated, I leave for further experiment and discussion.

[The subject of ventilation, we apprehend, is a matter of more moment here than in England, owing to a marked difference in our atmosphere. There is a wide difference of opinion on this subject even among good grape-growers. While some are agreed as to the extent to which ventilation should be carried, they are by no means agreed as to the best means of effecting it. This is an open subject which can be profitably discussed, and we invite attention to it. We shall go over the subject in good time, simply remarking now that we regard top ventilation with much favor. Dr. Houghton, of course, will follow up the subject; he has left it at a provokingly interesting point.—Ed.]

GLEANINGS.

BY E. H. C.

"There are," said Bernardin de Saint Pierre to J. J. Rousseau, "more than five hundred modes of looking at Nature." "Yes," replied Rousseau, "and none of them true."

Naturalists are apt to be like that King of Siam who, after a long series of observations in the hot climate where he lived, decided that water was always, and in its own nature, a fluid: a truth which was regarded as demonstrated beyond dispute until a traveller ascended the mountains of Ava, contiguous to Siam, and there encountered some philosophers who declared water was only a fusible crystal—a rock which heat alone could dissolve. O naturalists, you also have your mountains of crystal!

The world about us is all harmony, of which we can perceive only a part. The Cephisus that watered the gardens of the Academy has disappeared with the woods of Mount Hymettus. The old Scamander has vanished with the cedars of Mount Ida, beneath whose shade it had its source. The climate of Italy was aforetime milder than now—less relentless in its heat until the destruction of the forests of the Tyrol. He who cuts down a tree destroys a colony of insects, a home or haunt of many birds, a source of food to quadrupeds perhaps, or even to man. The plantain-tree that shades a fountain or hangs over the marshy borders of a stream, is a beautiful object. Between the river and the trees there is a harmony. The Persians were scourged with pestilential maladies from their marsh-bordered rivers until they brought the plantain-trees to their aid. "There has been no epidemic at Ispahan," says Chardin, "since the Persians adorned with such trees their rivers and gardens."

We may observe, too, the harmony of colors. Raphaelle was no such colorist as we find the sun to be. As the winter departs the modest violet first blossoms beneath a vail of leaves. This modesty means need of shelter. Protecting leaves radiate back upon the fragrant little flower all the heat it gives out. As the snows disappear, blossoms of other flowers open, which display themselves more boldly, but you will observe that they are blanched, or nearly so. In the transition from the last snows of winter to the first blossoms of spring, the harmony of color is preserved; hillsides and orchards are laden with a delicate white, varied rarely with the pink, as in the flowers of the almond. Petals of the apple blossoms floating on the wind resemble the flakes of snow so lately seen falling through the air. As the warm season advances, the colors deepen until we come to the dark crimson of the autumn flowers, and the brown of the autumn leaves. This change is meant not only to be beautiful; it has its use and meaning. Why are the first spring flowers all white, or nearly so? Because, while the winds are still cold, and the sun only moderately kind, a flower would be chilled to death if its heat were radiated rapidly. But radiation takes place more freely from dark colors; from black, from the strongly-defined greens, and blues, and reds. In the hot weather flowers and leaves so colored cool themselves more rapidly at night, and form upon their surface the refreshing dew. In the early spring there is little need of dew, and consequently of facilities for cooling. The delicate spring flowers are, therefore, of a color that is least likely to encourage radiation. For the same reason, because white substances give out least freely the heat they contain or cover, arctic animals are white, like their native snows. For the same reason, too, the snow itself is white. When the cold becomes intense, snow falls, and lies like a fur mantle upon the bosom of the earth. If the snow were black, or red, or blue, it would still allow a portion of the heat to escape, which is now retained under its whiteness. The colors even of men darken in hot climates, and in the hottest they become quite black. Black substances give out heat most freely.

In regions subject to almost incessant cold, a short summer produces flowers of extremely vivid coloring. The summer, although short, is fierce, and the plants radiate rapidly that they may escape destruction. The dark verdure of the northern pines would cause them to lose heat with great rapidity. To compensate for this, they are found growing in a pyramidal form, which catches and retains a cover of snow so cleverly as to protect them during the severe winter season. Birches that grow in the same forests, rise among the pines like silver columns, not formed and shaped to retain a covering of snow like the evergreens, because they do not need it.

Surely we need be at no loss to discern, amid such harmonies and adaptations of Nature, that

"Such bounty is no gift of chance,"

and that, in spite of the sneer of Rousseau, there is a true and useful way of looking at Nature.

The Parsonage, August, 1862.

[Very pleasant gleanings indeed; chaste, classical, and full of food for deep thought. We should be glad to have more such "gleanings" among the "ripe and mellow ears."—Ed.]

INTERIOR VIEWS.—No. IV.—EXOTIC GRAPERIES.

BY FOX MEADOW.

Much has been written on the subject of border-making, and also very much about the gross feeding propensities of the vine. It is considered by men of experience in Europe as in America, that the vine must be supplied with the "fat of the land," and to this *we* say, Amen. The vine borders of our intelligent fathers of a century ago did not cause them the troubles which are daily being presented to their should-be more intelligent sons! Their vines and their borders lasted for forty and fifty years—yes, ninety and a hundred! And who will say their fruit was inferior to ours? We say the samples of fruit produced by these men in those days were as good, and much better than the ordinary crops of the present day. Their bunches of grapes did not dwindle from two pounds to a half pound, in the course of three or four years of the vines fruiting, as hundreds of our graperies do at the present day; but they continued year after year till the half century rolled away, and the cultivator laid in the silent tomb, and still their vines lived, flourished, and continued to produce their average quality of fruit.

What was the cause of this? Had they the possession of some secret in border making that we do not possess? Have we not progressed in knowledge and chemistry sufficient to discover the identical elements that form every particle of the vine's organism, and that which is also needed to be ingrediated in the various particles of matter, so that "tartaric acid" shall be nicely blended with its saccharine? Who will say that we do not understand a sufficiency of the chemistry of the vine when we have special fertilizers in bags, and boxes, and bottles, from twenty pounds and upwards, so nicely compounded and adjusted that every element the luscious vine may require is *warranted* to be there? What secret did our forefathers possess? is the question. Common sense. And this was applied to the general principles of growth. Now, what are the general principles of growth? Let the intelligent mind go to the vegetable world and seek the answer to this question, and there he will find a universal law proclaimed, and so indelibly stamped upon every fruit-bearing plant and tree that the most

casual observer can not but recognize the law which governs and controls, and insures fruitfulness with health and longevity. This great principle our old grape-growers fully understood, and not merely understood, but practiced. Their vines or vine covered a large surface under their glass roofs, and their systems of pruning were such that insured not only heavy crops of fruit, but large annual *wood* growths. The progressive (!) system of the present day, by many termed scientific, reverses this order of things, and is endeavoring to cause the vine to produce all fruit and no wood growth. We wonder some of our scientific grape-growers do not contend that the few leaves their walking-stick grape vine produces are useless absorbents, and so remove them, that the bunches may become better swelled!

The general formation of vine borders fifty or sixty years ago was very similar to many of the present day, very loose, with a good deal of rich materials incorporated; but the vine-grower paid far more attention to the quality of the plant he planted than is done at the present day. We seem to care but little about *strength of roots*, so that the plant be bought cheap enough. Then, as far as the actual border making is concerned, there is little or no difference between modern growers and those of the "days of yore," but there is a vast deal of difference between the ground on the *outside* of their borders and that of ours, and this, with their difference of pruning and training, caused the difference in results. We have previously stated, that vines having strong, healthy roots when first planted, do not grow downwards, but grow through and out of rich borders. Now, this was just as much the case sixty or eighty years ago as to-day; but in England, where much attention is given to grape-culture under glass, the majority of vineries, with fruiting-houses generally, are situated in the gardens, and the latter are as rich as it is well possible to make them. The vine roots are soon out of the borders, through the causes previously stated, but they get into ground equally as good, if not much better, for the ground in those kitchen gardens is constantly trenched and highly manured, and in the act of trenching most of the roots get cut with the spade, and the consequence of this cutting back of the roots would induce them to throw out a host of others, and so increase the feeding powers of the vine. With such resources as this, combined with a system of pruning that permitted the vine to produce annually a proportionate wood growth to that of its fruit, any vine will continue to yield for an indefinite period of time good crops and good fruit. This is the only secret resting with the famous vines of England. Take those old vines, and exchange their present system of pruning —that of laying in new wood all over the vine—for our present system of spur pruning and fruiting to the top of the rafter, and what would be the consequence? why an instant stoppage of all growth; roots, of course, as well as all the external parts. There is no extension of roots unless there is an extension or increase of size in all the external organism of the vine. A vine that has not

increased perceptibly, after becoming a year older, in the diameter of its trunk or principal stem, is not growing, but dying!

Now let us see for a moment how the majority of graperies are situated in this country. The Eastern and Middle States are the principal localities where the exotic grape is cultivated, and all know that the natural soils are poor enough. Many of these vineries are erected as ornaments, and stand oftentimes on a poor, barren piece of ground, and others sometimes stand in the vegetable garden. Most of us know what our vegetable gardens are; and as to our "individuality," we would not object to walk a good many miles to see one that was really and truly—*rich!*

Now, where the natural ground that surrounds a vine border is poor, and the made border rich, the consequence is just what we have already stated, good roots are soon out of it and into the poor soils. The roots then, being in such poor conditions, together with the most miserable systems of pruning which are now being so generally advocated, viz., a system that directs you to labor with all might and main to crush and slaughter nearly every particle of new wood the vine endeavors to form, puts at once a stop to all growth! Growth then being stopped through ignorance of the fundamental principles of growth, men fly to the borders with a host of new-fangled ideas, which are based on no better grounds than their mal-systems of pruning and training.

In our experience there are but two fundamental points necessary to be understood in the culture of the vine, and these so simple, when the attention is directed to them, that many will wonder they had not seen them before. Yet simple as this may be, there is not a single author who ever wrote on the vine that seems to have recognized the simple truths on which are based the *law* for the healthful *continuance* though unlimited time of *growth* and productiveness. There is no productiveness without growth; nor is there any growth in an annual repetition of a given number of leaves, and the latter is all that is accomplished by *any* of the present authorities on pruning.

Now, in order to make our ideas clearly understood by the reader, we must show what we mean by growth; and as the roots are the principal agents acting in the office of growth, we will begin with the root first. The root, then, being long conduits with but little more than one mouth or spongiole attached to them, become strong and powerful in highly enriched borders, and this power gained through the rich compounds of the border carries the root almost directly to the outside and into whatever soils may immediately be in connection with it. Now what we propose to do is to change the character of these roots altogether, and institute a whole mass of fibrous roots, that shall be in, and work through, every square inch of soil in time, the border may contain, whether that border be one yard wide or twenty. If we can do this, then it will be pretty evident that whatever the border is composed of, the vines must feed on it, and the materials, which may have cost little or much money, will not be very materially wasted. Now

there is one great essential in vine border making, and that is, that the border be *open and porous;* and not so merely for one or two years, but that it ever remain so. All horticulturists agree on this point, although the materials they compose borders of is an utter impossibility for it ever to be so, with the exception, perhaps, of the first year. Now, then, says the reader, "What do you compose borders of, to so transform the character of the vine's natural roots, and make them similar to those of a currant bush, and at the same time warrant the border to ever remain open and porous?" Stop one moment, reader, before we tell you. We want you to brace up your nerves well, and if you have any prejudices, we want you to put them in your pocket, and let reason stand alone and untrammelled till we tell you, and then we shall not fear the result of your conclusions.

In answer to the above question, we say that the materials must be diametrically opposite to every thing which makes a border rich. We have but one objection to a border composed of *pure sand*, and that objection is this, which can be demonstrated by a practical experiment, thus: take a barrel, and fill it with sand from the side of some brook, (this being the purest,) and then take a few gallons of that black-looking manure water from the barn yard, and pour it on this sand, and you will find that this manure water will run out at the bottom, just the same color, and taste just the same, as it did before it passed through this sand. Now what inference do we derive from this? Why, that a border composed entirely of sand would not retain or hold long enough, the necessary elements the vine may require to produce wood and fruit. Yet, we all use sand in its pure state for rooting cuttings, and this because experience has taught us that cuttings will root quicker in it, make a larger number of roots, and of a more fibrous class, than in any other material we have yet discovered. So much, then, for sand. We will now take another barrel of sand, and instead of it being quite pure like the first, we will mix with it two or three handfuls of charcoal dust, and then repeat the application of the manure water. Now what is the result of this? Why, it is running out at the bottom of the barrel *pure water!* "Colorless?" "Quite so!"

Now, then, let us see what is to be done with this border of sand to make it productive; for, as just now stated, it is the material that will produce the most numerous class of roots, and also cause them to become fibrous, from the fact that, containing little of the food of plants, the plant is compelled to push out a numerous host of foragers to try to collect the means of its own existence. Now after we have compelled the plant to push out this host of foragers, we do not intend to be so unkind towards it as to let it die seeking the food it requires in a country that does not possess any. But with our sand experiments, we have found that the charcoal dust has been the means of retaining all the stimulating properties contained in this manure water, for nothing but the pure, white-looking water came from out the bottom of the barrel. Now what is this charcoal?

Chemists call it carbon, and its principal office in the soil is to absorb, therefore it makes this sand in question retentive of manures; and having achieved this much, it is all that is necessary to say of it now.

All the improvement, then, we wish to add to sand is, a sufficiency of carbon to prevent such fertilizing agents as may be placed *on it* from passing directly through it, and out of it, before the fibrous roots we have created can absorb it into the plant's system. Any carbonaceous matter, then, placed with the sand in question will answer the same purpose as pure charcoal, but we must take care that in using this carbonaceous matter in a state of *decomposition*, that we do not defeat the object in view, for the object in its use in the border is merely to *hold* in the sand, the *elements* we intend to feed the vine with. Now what can we select for this purpose to be added to sand? There are several kind of materials which will answer this purpose, the common soil—leaf mould, but perhaps the best of all is muck. The latter dug from swamps in the fall of the year, and so exposed to the action of frost that it becomes thoroughly pulverized. Many persons, however, think that if muck is subjected to the action of the air even during the summer, that that is sufficient to sweeten it. Such persons are grossly deceived. It may sweeten this material, but the summer's balmy air will never disintegrate the particles. The "Ice King" must bring his frigorific influence upon the watery particles contained in this carbonaceous matter, and *burst its whole tissue asunder* before it becomes fit for the use of the horticulturist. When this is done, there is no better substitute for pure carbon.

Our next work is to proportion these materials, in order to make the border just such a border as shall always hold the roots of vines, and just such a border as *we* grow grapes in. The "Editor," however, is looking "grum" about the space we are occupying,

So we take the "hint" to run away,
And live to fight another day.

[Fox Meadow becomes more and more interesting as he progresses. We perceive that we shall find in him a strong advocate of our favorite carbonaceous system. There is nothing like it.—Ed.]

(To be Continued.)

A CRYING EVIL.

BY A WEEPING SUFFERER.

A writer in the August number of your journal very good temperedly sets forth his grievances in having been imposed upon in the purchase of attenuated grape roots, which, after five summers' growth, only half cover his trellis. I beg

the privilege of shaking him (spiritually) by the hand, as I am also a sufferer, and can cordially sympathize with him in this particular. But there are other wrongs which we are called upon to endure, far more injurious than the one alluded to. His grape vines had the merit of being genuine. I can supply a case, where the unprincipled dealer furnished a bogus article, and did not scruple to receive the full value of the true one. I find that I am gradually getting my eye-teeth cut, and furnish this information for the benefit of your *young readers*. My neighbors think me rather green; but never mind, I know more than I did, and that is some compensation; the facts you can rely on.

In October, 1859, I was attracted by a showy advertisement in the *Country Gentleman*, of a firm in a Western city, offering grape vines of several varieties which were wanted by myself and neighbors, and we directly made up fifty dollars to form the nucleus of a couple of vineyards. The plants were packed and sent by a circuitous route, (not by the one ordered,) but reached us after having travelled double the distance, being stored in numerous places, and occupying as many weeks as they should have been days on the way; but came to hand at last, looking as we may suppose poor Navy Jack does, since his grog was stopped —decidedly dry. During the delay the planting season having passed, we heeled them in. The following spring, 1860, they were carefully planted in the ground prepared for them in the fall, and, to our astonishment, three fourths of them grew. My share of the plants were eighty Dianas, which I prepared to set out and cultivate on Bright's method; accordingly a bed was dug 12 feet wide, 3 feet deep, and 100 feet long, the hard pan carted off, and its place supplied with good meadow sods, top-soil, muck, and compost previously prepared, consisting of road washings, muck, ashes, and rotted manure well incorporated. I felt as if I had done my duty when I had thus prepared the bed, and had set each plant with my own hands, spreading the roots, covering in the most careful manner, and placing a good cedar stake to each. The growth of the first season was small, but when, in the fall of 1861, I cut each attenuate plant down to three eyes, I experienced a degree of satisfaction which only a successful cultivator can enjoy; but alas! to experience a sad disappointment in the future. The ripened wood was preserved and cultivated since, to increase my plantation, and has produced hundreds of strong plants of the What-is-It grape. In 1862, I had many promising bunches of grapes; the vines were cultivated, trained, and pinched on the most approved plan recommended by your journal. I soon began to see that they did not look like other Dianas; still my faith held on, as they grew well. About the 20th of July, the fruit being small, and shaped like a bird's egg, became mottled and of a dingy brown, and has remained so up to the present time, September 15th, hard, sour, and unripe, with a dogged tendency to remain so to the "bitter end."

Now, Mr. Editor, what am I to do under such circumstances? what would you do? Is it my duty to submit to this, and other ills that horticulturists are heir to? or shall I publish the names of the villains that have done this great wrong?

deprived me of my labor and money, and wasted three years of my precious existence, which no sum of money can ever replace; or shall I take the law? My nature is pacific, with a spice of the belligerent, which I shall retain until I get your opinion. Probably such things are not new to you. I know they occurred before, and that many people have put up with them, rather than engage in a contest with an unprincipled dealer. Numerous instances of frauds by nurserymen have come to my knowledge. I have in my eye an apple orchard; the trees were set some years ago, and many have borne fruit, not one of which are true to name, and many are the inferior and discarded varieties. A garden, in which are fifty or more dwarf pears, many of which are winter pears, though labelled Doyenne d'Eté, Beurré Giffard, Bloodgood, Tyson, etc., and some of which are of the old discarded sorts, that were put in without orders by the nurseryman, as being of his "own selection." A most gross and unpardonable fraud, which a dealer in any other business would not dare to perpetrate, and which would subject him to an arrest for false pretences. I can cite a grape house where thirteen different names were furnished for as many grape roots by the *honest* dealer who raised and sold the roots, and all produce the same fruit. In the same grounds are dwarf apples handsomely labelled the Tompkins County King, producing a small yellow fruit, ripening early in August; the Early Harvest, a red sour apple, not yet ripe, or likely to be for a couple of months, and others of like character.

Now the question arises, are these the result of carelessness, or direct fraud? The parties alledge that the mistakes were made by employees, incompetent persons or laborers. Have they a right to employ such help, and make their customers suffer for it? No! *qui fecit per allium, fecit per se*, and the men who make themselves rich in the business are the culpable parties, and should be made to disgorge in every instance and pay stoutly in damages. Nurserymen have a character at stake, and it is their duty to insist that frauds, whether by intention or mistake, should be corrected—with smart money. I am willing to submit my grievance to a jury of respectable nurserymen, and I suggest that at the fall meetings they organize a self-protecting association, admitting none who have been known to be fraudulent, and expelling those who hereafter become so. They could also appoint a committee to investigate and assess damages, in such instances as I have named above. A black book to contain the names of such nurserymen as are habitually fraudulent, would be of great value to the public, and it would make the careless look sharp to avoid having their names registered as such, as a warning to the rest of mankind. What does the fraternity say to this? Pope says, "an honest man (meaning a nurseryman no doubt) is the noblest work of God." Let them become less rare.

[A "Sufferer" has painted his grievances in strong colors, but none too strong. We have already called attention to this disgraceful feature of the nursery busi-

ness. We are glad to know that there are not many nurserymen who will allow such a grave charge to stand an hour against them. Still, there are some, and there is no use in denying it. No honest man will allow trees to go from his nursery under such circumstances; neither will he hesitate a moment to make full reparation for the carelessness and blunders of his employees. A man who knowingly commits such a fraud, should be compelled to make full compensation, either by the strong arm of the law or the fear of public exposure. Our advice to you is, to compel the parties by legal means to make full and ample restitution for the loss of your money and labor. Every honest nurseryman will thank you for it, as will also the community at large.—Ed.]

RURAL ARCHITECTURE.—No. II.

BY COGNOSCO.

When one contemplates building, and has put his thoughts and wishes into a tangible form, the leading question asked is, how much will all this cost? for what price in dollars and cents, without extras or additional charges of any kind, can this dwelling be erected for, in a good and workmanlike manner, in accordance with plans and specifications, and satisfactory to the owner? This is precisely the plain English of what a business man wants to know; for we hold that it is right and proper, that every one should look right through all the connected links and complications that require a considerable expenditure of money, and see that he lands carefully in the place anticipated. To start with the intention of disbursing $5,000, and wind up with an expenditure of $12,000, is not only annoying in a money point of view, but an impeachment of one's judgment and good sense, not pleasant to hear outsiders reflect on; for however much one might wish to shift the responsibility on to others, it is one of those things that time will always place where it belongs. As long as men consider the arts of designing and constructing buildings to be of no special importance, or that they are qualified, without instruction or experience, to practice them, expensive blunders will naturally result, and sooner or later it will be discovered that such wisdom is dearly bought. There are many, however, who prefer to manage their building affairs thus, and who can only learn more agreeable and less expensive modes by actual experience; some do it from ignorance, some from supposed economy, and others from the supposition that they are best qualified.

The design for a house or other building, and a plan of the interior arrangement of each floor, prepared by a professional man who makes such things the business of his life, is now very generally admitted by intelligent men to be essential; but the management or superintendence of the work by the party who has studied and designed it, does not seem quite so apparent. An architect pre-

pares the drawings for a dwelling to cost $5,000; now whether it actually will cost $5,000, $8,000, or $10,000, in the hands of another superintendent, is an unanswered problem. A prevailing folly which we find very general, is to suppose that all men can build the same house, in all places, for precisely the same amount of money; and but few are willing to admit that they, of all others, are not the most competent to carry through the whole business of building at the lowest figure. Some must find out in the most expensive manner, that the profession of an architect, or the skill of a builder, can only be attained by long years of careful application.

What a house will cost to build is a question always asked with the utmost symplicity, and a prompt and reliable answer always expected, and if not forthcoming at once, gives rise to a suspicion that one's professional ability is not of the most thorough character. There are so many conditions to govern results in house building, that even an approximate estimate may fall very wide of the mark. Two houses may be built from the same plan, and we may also say, from the same specifications; one by day's work, and the other by contract, and they shall be so exactly alike in all respects when finished, that an unprofessional observer would detect no difference, and yet one may honestly cost just double the amount in money expended on the other; even the same builder may build two houses precisely alike in all respects, and yet the cost be quite unequal. On one site stone may be easily obtained, a sand bank on the premises, a running brook close at hand, saw mills, brick yards, and lime kilns within moderate distances and accessible by good roads. The other site may be quite the reverse in situation, or have some decided disadvantages in obtaining some very necessary materials. We once built a fine stone house where stone was abundant and close at hand, but all the lumber and brick had to be hauled thirteen miles over hilly roads; the cost of that house has nothing to do with the cost of a similar house in a different locality.

A competent business superintendent has a great deal to do with the cost of a house; one that understands all the tricks of every building trade, that knows the market well, and the value and quality of all building materials, and where inferior workmanship and materials can be used to an equal advantage with those of first class. To slight work and yet do it justice; to give it all the strength and endurance necessary, requires one of skillful acquirements. A mechanic may persuade a proprietor into many a long day's work, as it pays well to nurse good jobs when other work is slack, but an architect who understands such things would save the value of useless work.

The cost of a house depends on a well-studied plan; this plan does not consist alone in the arrangement of rooms, windows, doors, etc., but involves a careful study of the anatomy of construction. One may save by a proper distribution of timbers, as well as make a very great saving by the arrangement of rooms.

Good management is of the greatest importance, not only as a matter of economy, but as securing the best class of workmanship, and the most judicious use of materials. Good or bad management produces the same results in building operations as in war or any other pursuit.

To make a work on architecture sell, it is necessary that the cost of the houses must be given; it is a species of humbug the public demand and are willing to pay for, yet every architect has encountered those who have been thoroughly fleeced by book architecture; not but what the book was honestly and truthfully written, but that the would-be self-instructed builder was ignorant of the conditions of success.

One takes up a capital work on rural architecture, written perhaps ten or fifteen years ago, before the general introduction of furnaces, steam pipes, gas, baths, marble basins, etc.; they find a house that suits them, which the book says will cost $6,000, and that is just the amount, by close figuring, that can be raised for building. The house is ordered, put in the hands of the best mechanic to finish all complete, and he goes ahead; he is unrestricted except by the book, and the author of it is a man of reputation. In the way of details perhaps nothing has been said; they are therefore extravagant in the use of materials, and elaborate in workmanship; as it is not considered good policy for a workman who has a good order to make suggestions calculated to decrease the amount of work. When the bills to the amount of $6,000 have been settled, the house is found to be half finished, and an additional $6,000 is necessary to complete it; less than one year's interest of which would have amply sufficed to secure the services of one who has spent the best years of his life to learn how to design and to manage work to cost a specified price.

When an architect says a house can be built for a certain price, it is to be understood that materials delivered on the ground shall not exceed an average cost, that the payments made are to be in cash, and that he manages the work. To hold an architect responsible or blame him for blunders in the cost of work that he designed and did not superintend, is manifestly unjust, yet it is a frequent occurrence. The cost of work is a question easily answered, when one is fully acquainted with all its bearings and has it under his control, but no one can say at what price a novice in building operations can execute.

[The class of persons had in view by Cognosco would very properly come under the old saw of "penny wise and pound foolish." We commend his remarks to all persons about to build. The remarks will hold equally good of landscape adornment.—Ed.]

HISTORICAL NOTES ON THE STRAWBERRY.

We last month gave an extract from *Landmarks*, containing Dr. Grant's mode of culture and preferences as respects the strawberry. We now give another extract, containing some very interesting historical notes.

"If we look back for the early history of the strawberry as a fruit, we shall not find any account of it to attract our attention farther back than about two hundred years, which is not until after our native Virginia Scarlet had been received and cultivated in England. It has been mentioned, indeed, by Pliny and others, who wrote more than two thousand years ago, but it was not sufficiently prized to make it a subject of cultivation. The only kinds at that time known in Europe were probably the Alpines, including the Wood and the Hautbois. The former are very extensively spread in native wildness, and the latter appear to have come from Northern Europe through Germany. It was very early called Polish, but its history is not well ascertained.

"It does not appear that any other kinds were known in England until after the Early Scarlet was introduced from America, where different kinds are found wild from Hudson's Bay to Louisiana, and perhaps South America. Some accounts state that the South American kinds, known as Chili Pines, were from those introduced to Spain from England, and thence to her colonies, thus making it probable that the Virginia Scarlet is the type and original of all the Pines or Scarlets.

"Up to the beginning of the present century it had been in England for more than one hundred and fifty years, thought worthy of so much attention that it was not unfrequently cultivated in the gardens of the wealthy, but its merit did not give it rank among the most esteemed and indispensable fruits. Its natural history had been written by Duchesne, and published about the beginning of the last quarter of the last century, and the work is still highly valued scientifically, but is of little use to the simple cultivator. At the beginning of the present century begins the 'modern history' of strawberry culture, or, to speak exactly, at the year 1806; for in that year Michael Keens, a market gardener, produced from seed his Imperial. As he states, it was from the seed of the Chili, but it is generally believed from the Carolina Pine.

"From this time strawberry culture assumes a new interest, and Michael Keens takes distinguished rank among public benefactors, not so much for having originated two seedlings, the second in course of which was the type of all of our present excellent varieties; as because by long years of indefatigable industry and careful observation, he learned and made known the conditions of success in cultivation. He did not offer to the public ill-digested and impossible theory, loosely built upon a *melange* of circumstances pertinent and impertinent, but a carefully elaborated and systematic method, from which half a century has laid

aside nothing as useless, and to which it has added little except minuteness of detail, adapting it to different circumstances.

"For a long time his well-cultivated perceptions had taken cognizance of the excellences and defects of the strawberry of that time, as a fruit; and he had labored with indefatigable zeal in his efforts to make it better by the production of seedlings. By careful and judicious cultivation he produced the best possible fruits of those at command. From the best specimens of these he, through the same course, produced others, and from these, in the year 1806, came the Imperial, and from this, a few years later, the Keens' Seedling.

"At this time no generally admitted classification of strawberries was in existence, and the want of it was much felt. In the year 1824, a classification was made by James Barnet, which was sufficiently clear and comprehensive for the wants of the time, and it is now recognized by all writers on the subject, including Professor Lindley. He makes seven classes, as follows: 1st, the Scarlet Strawberries; 2d, the Black Strawberries; 3d, the Pine Strawberries; 4th, the Chili Strawberries; 5th, the Hautbois Strawberries; 6th, the Green Strawberries; 7th, the Alpine and Wood Strawberries. Two other classes have been thought of—the Surinam and the Chinese—but concerning these sufficient knowledge did not exist to enable him to state with precision their characteristics, and no one has attempted to do it since.

"This classification does not claim to divide them by any clearly drawn natural line, but only to lay away in boxes several parcels each containing a convenient number to take out for examination, so that we can recognize the *individuals* as subjects for culture, and not for any scientific contemplation of the relations of likeness or unlikeness which they may bear to each other.

"A natural division would be into Pines, Woods, Alpines, and Hautbois; the Pines comprehending in one great class, without any division that is constant or well marked, our esteemed strawberries for cultivation, and having our field strawberry for its type and original.

"Of these classes only three are of special interest to our present consideration; these are, 1st, the Scarlet, of which the Virginia is the type. 2d, the Pine. For the type of this class we may take Keens' Seedling, or of those that are now better known, Boston Pine, Triomphe de Gand, and Bartlett. 3d, the Chili. This does not include the one that Keens speaks of as furnishing the seed of his Imperial. Mr. Barnet considered that the Carolina Pine, and included it in the general class of Pines.

"This (according to him) true Chili is very distinct in character, having very villous or hairy leaves of thick texture, the fruit very large and pale, and insipid in flavor. The chief interest of this class consists in its having furnished one of the parents of Wilmot's Superb. With the Black Strawberries we shall have nothing to do, as the Black Prince is not made of that class

by its color, but is with the Pines. The Green Strawberry assimilates so nearly with the Hautbois, that we need only say that it is like it in flavor, and is rarely grown, and only as a curiosity. The Wood and Alpine Strawberries are sufficiently distinct for separate classes, but to the cultivator, at present, they are of too little consequence to occupy our attention. I think further acquaintance with the Alpines will teach us that they are worthy of attention for special purpose. The Hautbois Strawberries are so distinct from the other kinds, that it has been generally supposed there is a specific organic distinction that will not permit of inter-impregnation, although it is claimed to have been done both in England and in this country; but nothing within my knowledge has been produced that could perpetuate itself; therefore it has played only its own individual part in the history of strawberry culture, and the 'Prolific (or Hermaphrodite) Hautbois' of a much earlier date than that named, is still the best of its class; 'sweet with musky fragrance,' bearing its fruit well up from the ground, as the name imports. Of the Alpines, Red and White, little need be said, except that under proper treatment they produce a small autumnal crop, and never more than a small crop of very small berries under any circumstances. These are only valuable for their curiosity.

"The Chili or South American Strawberry had been for a long period in the European gardens, but only as an unprofitable occupant; its own stamens being so imperfect as to effect fructification but sparingly, and its season of flowering being so late as to render fertilization by the pollen of other varieties impracticable for a crop. In size it surpassed other varieties of the time, with firm flesh, but poor flavor. It was from a seed of a 'White Chili,' according to Keens, that he raised his 'Imperial,' or Imperial Black, in 1806. But Barnet of the London Horticultural Society states that it was from the White Carolina Pine. It was exhibited before the London Horticultural Society in 1813, and a fine colored engraving of it published in the Horticultural Transactions.

"Of the Scarlet Strawberries the best was Early Scarlet, which was no other than our present Large Early Scarlet, which had been introduced from America two hundred years before, and was at that time their best strawberry. And it is not ten years, nor perhaps half that, since many of our 'best cultivators' spoke of it as the best variety for general cultivation in America. This was in a measure true, for according to the prevailing ideas of cultivation it was best, for it will produce some fruit under a degree of negligence which would render fruitless those that now rank as our best varieties.

"The production of Keens' Imperial was but a step in advance. It was not high flavored, and only tolerably productive, but was much the largest and handsomest that had been produced, and it was the first that bore its fruit on stalks well up from the ground. It had a strong influence in leading others to plant, and seedlings innumerable were raised, and many of a better character than had been generally grown. Foremost among these, for the number produced, was Thomas

Andrew Knight, President of the London Horticultural Society. The best that he raised was named Downton, but this was so far surpassed by two others, that it has been forgotten.

"Mr. Keens continued to plant strawberry seeds, as he had for a long time done; for the desire of improvement was in him a living force that would not let him rest. He was soon most munificently rewarded by a seedling from his Imperial, which has since been known as Keens' Seedling, or Keens' New Pine. This was a very astonishing production for the time, and must even now be regarded as a first-rate fruit in habit, size, flavor, and productiveness, when under the special treatment which in our climate it requires. The London Horticultural Society immediately (1821) published a finely executed colored plate of it, which for truth and spirit I have never seen surpassed. The fruit and artist were worthy of each other, and the London Horticultural Society never conferred honor more worthily.

"About the year 1815, a kind called the Roseberry Strawberry was sent from Aberdeen in Scotland, which, from its late season in flowering, fitted it to become a good fertilizer of the Chili. Mr. John Wilmot, who used it for this purpose in 1823, exhibited before the London Horticultural Society specimens of fruit from a seedling of this parentage that was equal to Keens' in size and beauty, but not so valuable. About this time Mr. Wilmot also raised from Keens' Imperial one that was justly esteemed as valuable, which was named Wilmot's Black Imperial. It was afterwards known in England and this country under the name of Black Prince; and when circumstances were favorable, it was excellent in flavor, and productive, and much more hardy than its parent, but still sensitive and variable. Ross' Phœnix, an American seedling from Keens', was also much better for general cultivation in this country than its parent. The two were well calculated for field culture under good management, while both Wilmot's and Keens' needed the special attention of the skillful gardener, in consequence of their tenderness, resulting from foliage which, under ordinary circumstances, could not endure our scorching summer suns. I have not yet fully noted the part that Early Scarlet has performed, and by saying that none of its direct offspring has been greatly distinguished, I have apparently disparaged its importance. It will be noticed again, for although it is now rarely remembered, I think its office is not fully accomplished."

SOMETHING ABOUT EGYPT.

BY S. C. SPAULDING, COBDEN, ILL.

HAVING been a subscriber to the HORTICULTURIST for the past two years, and never having seen any thing in it relative to this section of the country, it occurred to me to drop you a line relative to it; also to make some inquiries.

This is in about the same latitude as Richmond, Va. Formerly it was a densely timbered country for twenty-five miles around; but now an opening here and there caused by the sturdy strokes of the chopper, which relieves you from the monotonous view of an ocean of timber or tree-tops. This particular section appears to be a continuation of the Ozark range of Missouri, extending from the Mississippi to the Ohio River.

Here one accustomed to the scenery of New England, the majestic trees, the precipitous rocks, with all of the grand beauty which nature has bestowed upon that country—except the broad rivers and purling streams—for we depend mainly upon rain-water—such a one feels that he is at home again. It would be impossible for me to describe the country commonly called Egypt.

You have an idea, perhaps, from its name, that it is a low, rich country. There are places which are low; but then from these places it rises, table above table, until you get to an elevation, not a mile distant, of over four hundred feet. These points are frequent. From such a one I am now writing. The blue hills of unfortunate Missouri, the smoke of her steamers as they pass up and down the Mississippi, are distinctly discernible, although twenty-five to forty miles distant. To the southeast are the smoky hills of Kentucky, just perceptible to the naked eye.

The soil is a reddish clay, with a mixture of sand. It is the same to any depth which any one has penetrated. On this elevation there are some twenty-five acres of fine tillable soil, and around almost the entire extent are precipitous sandstone rocks. The soil is free from floating rocks; consequently easy of cultivation. The same soil you will find throughout this section.

The adaptation of this country to the growth of fruit trees and fruits of all kinds is not surpassed by the marvelous stories of California, excepting, perhaps, the grape. I saw in the spring a peach tree in bloom, which grew from the seed the year previous. Also an apple tree, or scion, in bloom the first year after it was inserted in a seedling of one year's growth.

Here are standard apple trees, perhaps of a dozen varieties of fruit, which were brought from Rochester, and planted four years since, fruited last year, and are now bearing large and finely developed apples, and will measure twelve feet across the top. These things and sights are new to me.

I have an early Crawford peach tree planted three years; it bore me this year over a basket, or half a bushel, of beautiful, high-colored fruit. The tree is large enough to have borne a bushel and a half. Its trunk measures six inches in diameter.

Pears grow to perfection. Apricots, quinces, and, in fact, nearly every variety of fruit does well, and more than well. The apples are so large here, that there has been quite a dispute about varieties, owing to that fact of size.

The grape, as yet, has proved a failure, excepting a few sorts.

The Delaware rots in some localities; the Concord has not rotted, as far as I

can learn. There are some here—large, beautiful clusters—perfectly healthy, and just putting on the color fully. These other sorts which are free—I can not tell them until they ripen more fully.

The strawberry is a prolific bearer in this region.

I fear I have tired your patience, and now to my questions.

[We are obliged to you for your interesting description of the "land of Egypt." We are willing to believe it a marvellous country for some kinds of fruits. We have received specimens of well-known apples, but so altered in size as to be scarcely recognizable. That grapes will grow there we have no doubt, but all kinds not equally well. The time will come when grapes will be divided into kinds for localities and kinds for general cultivation. We are surprised to hear that the Delaware rots. This is the first intimation of the kind that we have heard of. Will you please assure yourself further on this point, and let us know the result? We are by no means tired; but as we have already answered your questions, we omit them here.—Ed.]

CIRCULATION OF THE SAP.

The last number of the *Gardener's Monthly* contains a very interesting article from Yardley Taylor on the "Circulation of the Sap," from which we make the following extract:

"The theory of a downward flow of sap, as supposed by the first writers on vegetable physiology, is giving way, and the writers of the present day assert that there is no such flow. (See article 'Botany' in the 'New American Encyclopedia.') Theoretical writers, or those who copy from former ones, often advance the same theory; while practical men, who base their theories upon their observations of nature, reject it. Nurserymen who practice grafting, know that success can be had by inserting the graft so that the inner bark of the graft of the stock shall be in contact, so as to admit of the sap from between the bark and the wood passing upward into the graft between its bark and wood. There can be no other way for growth, as the granules of new wood only form between the bark and sap-wood, no where else, and this material for growth must come from below, for there are no leaves above to prepare the matter for assimilation, as the downward theory supposes. Budding, as practiced by nurserymen, is equally conclusive; there the bud only rests upon the sap-wood beneath the bark, and in no contact with the pores of the wood at all, only with the pores between the bark and wood; and if the top of the stalk is cut off, as is usual, it grows at once, though there is no part above from which a downward flow can come. Many more facts might be

mentioned, all leading to the same conclusion, but these, so well known to all who are acquainted with grafting or budding, may suffice; indeed, the evidence appears to me to be so conclusive, that I can see no reason whatever for a downward flow. It appears to me to be too much of a roundabout way to attain an object, to be consistent with what we know of the simplicity of nature's laws; they are always direct, and to be admired for their simplicity.

"If, then, there is no downward circulation, as I confidently believe there is not, the question recurs, 'what is the true theory of the circulation of the sap?' This, to my mind, is very simple and plain; whether I can make it appear plain to others, remains to be seen. Let us recur to facts generally admitted, and base our theory there. All writers on vegetable physiology, I believe, admit that water from rain and snow containing matters for growth is imbibed by the roots, principally by the spongioles or small rootlets, though I have little doubt that even the large roots imbibe some, as their bark is spongy. Among these matters, carbonic acid gas is prominent, and it is generally believed that a portion of this gas is imbibed by the leaves. This gas is considered the only source from which the carbon of the plant can be derived. Carbon, we know, is deposited in growth, and chemists tell us that oxygen is given off in the daytime. Other matters, as potash, &c., are believed to be carried into the plant in the same way; of these facts there is little dispute.

"Carbonic acid gas, however, must be decomposed, and we know that it is, but by what means, there is difference of opinion. Sunlight has been considered the agent of this decomposition, but of this there may be doubts. If there is no downward circulation, the gas can not be decomposed in the leaves, as is by many supposed. Further, we have no other evidence, than this supposition, that sunlight can decompose carbonic gas at all; nothing in my reading of chemistry would encourage the conclusion that sunlight can release oxygen from its compound. Some other agent then must be sought for, and we have one in electricity, that we know can effect this decomposition.

"The beautiful art of electrotyping is evidence of this fact. Here metal is dissolved by acid, making a compound of oxygen and metal dissolved in water, by the application of galvanism, which is only another form of electricity; the oxyen is given off, and the metal is deposited in its own form again. If electricity can release oxygen from this compound, why may it not from all its compounds? Oxygen is negative, while carbon and metals are positive. This presumption has much stronger grounds for its foundation, than that for the effects chargeable to sunlight.

"Electricity has been proven to greatly facilitate vegetable growth. If we erect wires, say ten or fifteen feet high, in an open space, and pass them beneath the soil where vegetables are growing, these vegetables near and above these wires will be larger than others at a distance. Here the electricity can add

nothing of itself to the plants; it must act by inducing greater activity in some principle of growth, and what principle can that be, other than the decomposition of the carbonic acid in the soil and vegetable matter within its reach, thus giving more carbonic gas to the plants? This is the only rational explanation that can be given, and it is to the point.

"Now let us apply these principles, founded upon facts. The carbonic gas being carried up in the sap, which is the water containing matters for growth imbibed by the roots, and this gas passing principally between the bark and wood, where most of the sap passes, and where it is needed most for growth, is decomposed by electricity exactly where needed, and deposited there, a small portion is deposited in the pores of the sap-wood, thus making it more firm, and converting it into heart-wood. The sap being deprived of its gas brought up from the roots, principally near the lower part of the trunk or body, is further supplied by that received by the leaves, and this passing down through the sap as it is known that this gas has a great affinity for water, would supply all parts, and will mix with it in all directions whenever it comes in contact with it. Trees and plants are as conductors of electricity from the earth to the air, and from the air to the earth. Every sprig, every point of a leaf, acts as a conductor for the fluid in passing. Some have doubted whether there is electrical disturbance sufficient to cause action enough to produce such an effect, but electricians have proved that the electricity of the atmosphere is very variable; that it is at its maximum at one time of day, and at its minimum at another. Hence when it is at its maximum in the air, the earth must be negative to it, and the earth will receive a portion; and when at its minimum in the air, the earth will be positive, and then give off a portion to the air, thus keeping up a current between the air and the earth. Electricity having an attraction for water, will pass through the sap of plants in preference, precisely where the gas is to be decomposed.

"Here then we have a theory for the circulation of the sap, at least for the requirements of growth; one that is plain and simple, yet meets all the requirements of the case; one that is based on facts that we do know, and but little left to conjecture. At the fall of the leaf in autumn the body of the trees has but little sap; the pores of the wood are mostly filled with air. During the fall and winter, whenever the earth and air are above the freezing point, the roots are imbibing moisture. Whether this is by capillary attraction or not I leave, but presume it is by that power, as water will penetrate every body not positively impervious, where there is less water. By the time that warm weather returns in spring, this sap thus lying in the pores through the winter, undergoes some chemical change, converting part into saccharine matter. This matter thus furnishes the nectar of flowers, and is conspicuous in early flowering trees like the maples, for instance, that blossom early. Almost all trees will furnish sap at the first flow that may be made into sugar, but some, as the maples, more freely than others. This first flow

of sap takes place in the winter often, when there comes warm days and frosty nights, and frequently when the ground is frozen; but the ground being frozen is no evidence that the tree and its roots are frozen, for living plants will resist a much lower temperature without freezing than dead matter will. The roots of trees are often far below the frost, and may be supposed to be a conductor of that temperature upward. As soon as the warm weather induces a full flow of sap, the saccharine sap is diluted and carried upward, and no sugar can then be made from the body of the tree. This full flow of sap fills every pore of the tree; and as the warm weather advances causes the bud to burst and the leaves to expand, and these then become the medium of giving off the moisture of the sap, leaving the matters for growth behind. Thus carbon, gums, rosins, potash, etc., are deposited each in its place. The philosophical editor of the '*Flores des Serres*,' of Belgium, says that the offices of the leaves are chiefly perspiratory, and 'that they will so be acknowledged some day.' Many others are coming to be of this opinion.

"From the great quantity of water known to be given off from the leaves of vegetables while growing, we may reasonably conclude that matter enough for growth is carried up by the sap to account for all we see, even supposing that the amount is small in a given quantity of water. The continual rising of this matter, and being left for growth, would first make it appear as milky, as I have observed in early spring on taking off the bark of oak timber; as it becomes more dense it would assume a jelly-like appearance, as I have witnessed in taking off the bark of apple trees, about the 20th day of the first summer month, to try to cure such trees of the bitter rot. Then, again, at the fall of the leaf, it has become firm wood, and at this season there is little water in growing wood, less than at any other time. This amount of water, however, somewhat depends upon the wetness of the season. In late summer and early fall, we often have dry weather, favorable for well ripening wood, but sometimes we have wet in the fall so as to start late growth; we then know that such late wood is not able to stand the winter safely, but is often injured, particularly if cold sets in early. Late growing plants are more liable to be injured in this way, than those that perfect their growth early. The oak and similar trees, that never start into second growth the same season, do not suffer in this way.

"We have reason to believe that the roots of perennial plants take in water as sap at all seasons, except when interrupted by drought or frost, either of which prevent it. Thus in fall and winter in mild weather, a supply is laid up for active use when the warmth of spring shall induce active growth."

PRACTICAL PAPERS. VI.—PRUNING GRAPES IN THE GARDEN.

BY OLAPOD QUILL.

In my last paper I stated the manner in which grapes should be planted in garden plots and small pieces of ground, with a fair prospect of yielding fruit, if properly pruned and attended to as they should be in the future. The treatment of the grape vine, pruning, training, stopping the laterals, or "nipping in the thieves," as they are called, and taking off the superabundant fruit, often deters many from planting the vine at all. There is so much charlatanry expressed by some concerning the manner of treating the grape, that many persons are inclined to think no one but a *professed* gardener can successfully cultivate the grape. Now this is not so, as my own experience in grape culture has convinced me that any one with common intelligence, and a wish to raise good grapes in their garden or border, can do so. "How shall the vines I have planted be pruned?" Simply by pruning in such manner that new wood may be grown every year for the next year's bearing, and the old bearing wood removed, or cut away.

If you have planted your vines twelve feet apart, for a trellis, (as I suppose you have,) and you wish to train them as uprights, upon the same, you will with a *sharp* knife cut in the young vines two or three eyes, till you can get two vigorous canes, ten or twelve feet long, branching say about twenty inches from the ground. Next, cut off these canes, leaving each one six feet long. Place these canes in a horizontal position, and tie them to the lower bar of the trellis. Every eye on these canes will, if healthy, send upwards the bearing branches.

Cut in every other one of these upright branches every year. As your vines grow older, and more vigorous, a second system of horizontal canes may be grown above the first. The trellis should be about nine feet high.

If your vines are grown by training to stakes, as in the vineyard system, you will then use what is termed the Bow and Spur System. By this manner of training, the young vines should be cut in two or three buds, till two canes are grown ten or twelve feet in length, which should branch about one foot from the ground. Cut off one of these canes just above the first joint, near the main stem. Remove carefully from the other stem all the side shoots, and bend it into the form of a bow, by bringing the extreme, or cut end, to the stake, near the main stem, and tie the same firmly to the stake with bass matting. The upper portion of the bow is to be tied firmly to the top of the stake in like manner.

A new cane will grow from the spur of the cane cut off, and will form your bearing cane for the next year. The next year you will cut off the cane that has borne you fruit this year, and this course of alternating you will practice every year. By this process of training you secure to yourself the new bearing wood, which is of so much importance, and which is, in fact, the principal object in pruning. The above has been the course of treatment pursued by myself, and

in most cases with good and *remunerative* success. If you are desirous of testing the truth or falsity of the above, you may be sure of one thing, your vines will always be in a healthy condition, and if the finest fruit the vine is capable of producing is not yours, I can not tell you the reason "why you will not get it." You most surely have used the means to procure it, and without doubt will receive the recompense of your labor. In some future number of the Practical Papers, I shall treat of the manner of "stopping the thieves," thinning out the grapes, and other matters relating to grape culture not important to the cultivation of the grape in small plots or gardens, enough having already been stated in these papers to enable any one who may wish it a good degree of success.

NOTE.—OLAPOD would desire the readers of the "Practical Papers" to understand that the omission of the Delaware grape vine in his selected list of vines, in paper No. V., was entirely accidental. He thinks it one of the best grapes raised.

Some little explanation may be deemed necessary by *some*, to the proper understanding of the use and quantity of the materials in the border. I give the quantity used by me from the written notes of my experiments, viz.: I placed in the trench for the drainage of the border, one bushel of oyster shells—cost of carrying home. Upon these I placed fifty pounds of beef bones, obtained generally for one dollar per hundred pounds. Upon these bones I place from one peck to one peck and a half of wood ashes: cost, twenty cents per bushel. Upon the ashes I place one quart of granulated or fine bone-dust, at a cost of twenty to twenty-five cents. Upon these latter I place six inches of good garden mould; and upon this mould I set out my vines, carefully spreading out the roots, and cover the same with a compost composed of one half garden mould and the other half scrapings from the road. I did not deem it necessary to state in my article that the soil would naturally wash into the bones and shells, and become partially incorporated with the mass, supposing that any one would infer the fact from a careful reading of my article. I intended to avoid all *confusion* of ideas, by the statement of a practical, repeated experiment, with me a successful one, the *truth* or *fallacy* of which any one disposed can try with an outlay to themselves not exceeding two dollars, provided they prepare the trench themselves. I will warrant this plan will prove successful, and after their vine has grown in this border two years, they will find it exceedingly hard for them to pull it up by the roots with their hands, so deeply and thoroughly will they have become incorporated with the composition of the border.

[Olapod's explanation does not render the matter clear to our understanding, if taken in connection with his former article. The quantity of each material used, as here given, is a considerable aid, but the sum total would fill but a small hole, "through whice and out of which," as Fox Meadow expresses it, a

grape vine would find its way in less than two years. Olapod directs a trench to be made four to six feet wide, and three feet deep, and filled two thirds full of oyster shells, bone dust, wood ashes, lime, broken bones, etc., over which is to be placed six inches of garden mould. Now suppose this trench to be twenty feet long, (and few will be shorter,) and we leave Olapod to calculate the cost of filling it two thirds full of the materials named. Our figures make it amount to a pretty round sum. When Olapod has furnished this calculation, we should be glad to have him make two or three other points plain, so that we can understand him fairly. We shall then have some criticisms for No. VI. As the matter stands at present, there is a wide difference between us. We are glad to know that the omission of the Delaware was accidental.—Ed.]

THE JALOUSIE DE FONTENAY VENDÉE PEAR.

(*See Frontispiece.*)

Our *Frontispiece* this month is a beautiful specimen of the Jalousie de Fontenay Vendée Pear, grown by Dr. Grant at Iona Island, from which we have the following description:

"The tree is uniformly vigorous and healthy, and not a very early bearer, but productive, and unfailing in its crops. It takes readily any desired form in training; the tree from which the present specimen is taken being goblet form, with a stem about two feet in length. Last season it bore about three bushels, and the present about four. Its fruit hangs with remarkable tenacity, and very fierce winds have but little effect upon it; but specimens taken off before fully grown ripen in the house without any deficiency of flavor. The tree is six inches in diameter one foot from the ground, and those that were planted at the same time, and grown as pyramids, are nearly the same size, but have not borne quite as much, although perfect in health, and handsome trees. Its shoots are pretty strong, rather upright, and fine olive green in color; sometimes greenish yellow, with some light specks. Petioles long and slender; leaves partially folded, curved, and finely serrate; remaining long on the tree; roots branching, fibrous, and very abundant.

"Fruit of medium size, or large pyramidal or pyriform, generally inclined, and broad at base; skin light yellow, and often retaining a little tinge of green at maturity on those that are grown in the shade; but those exposed to the sun have often a fine red and yellow cheek, with markings and patches of russet. The stalk is more than an inch long, a little obliquely set on the point, which varies from acute to obtuse, and without depression. The calyx is closed, with stiff segments, in a basin rather shallow. The flesh is very melting and juicy, slightly buttery, with a rather rich, pure, sugary, refreshing flavor. The brightest colored specimens are the richest in flavor, showing that some sunshine is of advantage to them. It ripens early in October. Without being of highest rank in flavor, it will be called good by every one, and is valuable."

EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, Remittances, Packages by Express, Advertisements, &c., should be directed to MEAD & WOODWARD, Editors and Proprietors, 37 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

OUR ADVERTISING COLUMNS.—We desire to call the attention of our readers to our advertising columns, representing as they do the energy and spirit of those who provide all that relates to the useful and ornamental accessories of a Country Home. To those who contemplate extensive operations in the way of planting, no more favorable opportunity could be presented. Prices are lower than they ever will be again, and our leading nurserymen are making it an object for those who wish to purchase, to purchase now. The value of our magazine is well understood by most dealers; it reaches a class who have money to spend, and who desire to be posted on such matters, and those who fail to let themselves be known, are those who make the most complaints about hard times. The self-interest of every nurseryman prompts him to use his influence to extend the circulation of all papers relating to his business; for in the same proportion that the community become educated to the higher enjoyments of country life, so does his business increase; fine fruits, fine trees, flowers, etc., are desired when their value is known. The refinement of country life, and the rise and progress of such pursuits as they sustain, are mainly due to the influence of the Horticultural press, the progress during the last twenty years being almost marvellous; and this will continue as long as the subscription and advertising lists are so well filled.

BUCHANAN'S SEEDLING PETUNIAS.—We are indebted to Mr. Buchanan, of Astoria, for flowers of his seedling Petunias. Those sent are all very beautiful, and some of them are quite unique, the markings being striking, and quite uncommon. A photograph has been taken of a group of them. If it proves to be successful, our readers may expect to see it. Mr. Buchanan is one of our most industrious and successful seedling growers.

DRUMMING OUT THE CURCULIO—BRANDY AND SUGAR.—A correspondent, writing from Indianapolis, gives us his latest experience with the Curculio. The means employed indicate an ingenious and practical mind, ever ready to appropriate the simplest appliances to a useful purpose. That lime is distasteful to the curculio,

we know very well, as it is also to many other insects. Those who are fond of "trying all things" will of course give this a trial. The lime may drive the curculio away, but will not kill it, which should be our chief aim. The "jarring" system, in this respect, has a special claim to attention, as the curculio is killed, and the evil is lessened both to the individual and the community at large. In this connection, we would again recommend the formation of insect clubs in every community where fruit is grown. But to return to our correspondent. He writes as follows:

"I saved the crop of two valuable plum trees this year, with lime, applied as follows: I took a child's toy drum, (I did not take it from the child, though,) costing twenty-five cents; punched small holes in the ends, and bored gimblet holes through the wooden portion. Fine air-slacked lime was then introduced through a hole in the side; the drum was fixed on the end of a light pole twelve feet long, which was passed through the hole aforesaid, and a corresponding hole on the opposite side.

"I sprinkled the trees liberally with this, two or three times a week, much to the disgust of the curculio, which was literally drummed out of the garden. If fine wire-cloth was substituted for parchment on the heads of the drum, the 'mersheen' would be nearly perfect. No patent on this; it is a free gift to the country. I have saved plums by syringing with whale oil soap suds, but consider the lime quite as effectual and less troublesome, with the additional advantage that you can see exactly what portion of the leaves and fruit have been reached by the operation." He then adds:

"By the way, in your September 'green back,' which has just been thankfully received, you say that Mr. Mottier '*does not use brandy and sugar*,' or words to that effect. Perhaps you mean that he does not use them in making wine. Let us have the facts."

Well, we "rather" think you've got us there, and we own up "handsomely." If we were not at the moment very ill, we should ask you to come on and take a "little." As it is, we send you "greeting." We of course meant that Mr. Mottier puts neither sugar nor brandy in his wine; we leave you to *guess* where else he may put it. We know, however, that Mr. Mottier makes a capital brandy, which is very good with a little sugar in it—for medicine. Again he says:

"If you print this, please do not attach my name to it, or Mr. Mottier might send me a box of his 'Catawba,' and it does not agree with me."

You ought to have it, any how, after that, and we hope you'll get it. Mr. Mottier can consign the box to us, however, and we'll keep it for you—as long as it lasts. In conclusion he says, as we think, very appreciatively:

"I take great interest in your articles on grape culture and cold graperies, and look impatiently for your pear experience."

Thank you. We have them all under way now, as you will perceive by the present number.

CRANSTOUN'S SEEDLINGS.—Mr. Cranstoun, of Hoboken, has sent us specimens of seedling Phloxes, Verbenas, Petunias, and a Heliotrope. Some of the Phloxes will rank among the very best that we have ever seen. Two of the Verbenas are very beautiful, and of decided merit in form, color, and habit. The Petunias embrace double and single varieties, and some of them are very fine. The Heliotrope is of a dark color, somewhat like Voltairianum, with a very large truss of delicious fragrance. It is a free bloomer, and of good habit. We have named the best of the above seedlings, and hope Mr. Cranstoun will send them out; for they are very much too good to be kept from the public.

AMERICAN POMOLOGICAL SOCIETY.—At the moment of writing the Pomological Society is in session in Boston, we hope with a good attendance. Being too much indisposed to undertake the journey, we fear we shall not be able to give the proceedings till our next issue. The Society being one of our own children, we feel the disappointment deeply.

PRIZE ESSAYS OF THE AMERICAN INSTITUTE.—We have alluded to a list of prizes offered by the American Institute for essays on given subjects. Among these we find a silver medal for the best new varieties of spring Wheat, winter Wheat, Oats, field Corn, and seedling Potato. A silver medal for the best seedling Apple, Pear, and Grape. A gold medal for the best essay on the culture of the Pear. A silver medal for the best essay on the culture of the Peach. A gold medal for the best essay on the culture of the foreign Grape; the same for the native Grape. A silver medal for the best essay on the culture of the Strawberry. A silver medal for the best essay on preserving ripe fruit. A silver medal for the best essays each on cultivating the Potato, Asparagus, and Celery. A silver medal for the best essay on domesticating animals; another for poultry. There are silver medals also for Draining, Forcing Houses, Wine, Corn Sheller, etc. There is also a list of liberal prizes in the mechanical department. The reports are all to be handed in by the 31st of December. The circular of the Institute may be had by addressing James Renwick, LL. D., Corresponding Secretary, New York. The prizes are worthy of the consideration of all parties who feel an interest in these subjects. We trust some good may result from them.

WILSON AGRICULTURAL SOCIETY.—The fourth Annual Exhibition of this Society will be held in the village of Wilson, Niagara County, N. Y., on Thursday and Friday, October 9th and 10th. There are some things in the prize list that are noteworthy. There are not only prizes for vineyards, orchards, flower gardens, etc., but also for underdrained fields, the largest number of shade trees planted during the year, and the best worked road. Such things are worthy of more attention from State societies, and we hope will receive it.

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Thank you. We have them all under way now, as you will perceive by the present number.

CRANSTOUN'S SEEDLINGS.—Mr. Cranstoun, of Hoboken, has sent us specimens of seedling Phloxes, Verbenas, Petunias, and a Heliotrope. Some of the Phloxes will rank among the very best that we have ever seen. Two of the Verbenas are very beautiful, and of decided merit in form, color, and habit. The Petunias embrace double and single varieties, and some of them are very fine. The Heliotrope is of a dark color, somewhat like Voltairianum, with a very large truss of delicious fragrance. It is a free bloomer, and of good habit. We have named the best of the above seedlings, and hope Mr. Cranstoun will send them out; for they are very much too good to be kept from the public.

AMERICAN POMOLOGICAL SOCIETY.—At the moment of writing the Pomological Society is in session in Boston, we hope with a good attendance. Being too much indisposed to undertake the journey, we fear we shall not be able to give the proceedings till our next issue. The Society being one of our own children, we feel the disappointment deeply.

PRIZE ESSAYS OF THE AMERICAN INSTITUTE.—We have alluded to a list of prizes offered by the American Institute for essays on given subjects. Among these we find a silver medal for the best new varieties of spring Wheat, winter Wheat, Oats, field Corn, and seedling Potato. A silver medal for the best seedling Apple, Pear, and Grape. A gold medal for the best essay on the culture of the Pear. A silver medal for the best essay on the culture of the Peach. A gold medal for the best essay on the culture of the foreign Grape; the same for the native Grape. A silver medal for the best essay on the culture of the Strawberry. A silver medal for the best essay on preserving ripe fruit. A silver medal for the best essays each on cultivating the Potato, Asparagus, and Celery. A silver medal for the best essay on domesticating animals; another for poultry. There are silver medals also for Draining, Forcing Houses, Wine, Corn Sheller, etc. There is also a list of liberal prizes in the mechanical department. The reports are all to be handed in by the 31st of December. The circular of the Institute may be had by addressing James Renwick, LL. D., Corresponding Secretary, New York. The prizes are worthy of the consideration of all parties who feel an interest in these subjects. We trust some good may result from them.

WILSON AGRICULTURAL SOCIETY.—The fourth Annual Exhibition of this Society will be held in the village of Wilson, Niagara County, N. Y., on Thursday and Friday, October 9th and 10th. There are some things in the prize list that are noteworthy. There are not only prizes for vineyards, orchards, flower gardens, etc., but also for underdrained fields, the largest number of shade trees planted during the year, and the best worked road. Such things are worthy of more attention from State societies, and we hope will receive it.

GRAPES.—Early in September we received a fine bunch of Rebecca grapes from Mr. Schmidt, of Piermont. They were grown under glass, however; those in the open air were not nearly ripe at the time. Some time previous to that we received from Mr. Marié a small bunch of a delicious little black grape, grown in the open air, in a sheltered position. The berries were about the size of the Delaware. These are the only ripe grapes we have seen, except the Creveling and Hartford Prolific. The latter were in the New York market as early as the 14th, and may have been before that.

DREER'S PANSY SEED.—We have neglected to acknowledge from Mr. Dreer the receipt of a package of Pansy seed. We grew some last season, and the flowers were so fine as to warrant us in saying that no better seed can be bought.

HORTICULTURAL PICNIC AT CINCINNATI.—We have received a very polite invitation to be present at the Horticultural Gathering at Mr. Buchanan's, for which he and his associates will please accept our sincere thanks. Being unable, from illness and other causes, to attend, our friends may at least rely on our spiritual presence, as well as our best wishes for them individually and the cause to which they are devoted.

HYACINTHS, ETC.—Messrs. Thorburn will please accept our thanks for a choice collection of bulbs. We have never seen any finer.

SULPHITE OF LIME.—This article was for the first time brought to the notice of the Massachusetts Horticultural Society some five or six years since by Prof. Horsford, of Harvard University. This salt has the property of arresting the process of fermentation, and was recommended by the professor for preserving cider, though it may be used in other beverages produced by fermentation. We have tried it, and found it to fulfil the purpose for which it is recommended. Other salts of lime have been sold and used for the purpose, and with ill results. The season of cider making being at hand, we call the reader's attention to the subject, with a caution to be sure and get well-prepared sulphite of lime.

BOOKS, CATALOGUES, ETC., RECEIVED.

P. & E. Transon Brothers, Orleans, France.—Nursery and Trade List for Autumn of 1862 and Spring of 1863.—We receive annually the Catalogue of Transon Brothers, and find it to contain an extensive assortment in the fruit and ornamental department. The present catalogue is intended for the trade. The agents here are Messrs. Knauth, Nachod, and Kuhne, 28 Broad Street, New York.

C. W. Grant, Iona, near Peekskill, N. Y.—Descriptive Catalogue of Vines, and Wholesale List.—This is a new edition of the Catalogue, with valuable additions to the descriptive matter. There is no Vine Catalogue like it.

Prince & Co., Flushing, L. I.—Catalogue of Small Fruits, Select Strawberries, &c., cultivated and for sale at the Linnæan Gardens and Nurseries.—This, we think, is the best catalogue of Strawberries yet issued by Mr. Prince. There are some 250 varieties, including his seedlings.

Thomas Morgan, successor to J. W. Faulkner, Stamford, Conn.—Annual Catalogue of Trees, Plants, &c.

Correspondence.

P. B. MEAD, ESQ.,—*My Dear Sir*:—In a garden here, with good aspect and under good cultivation, I have to make the following report on mildew on grapes, viz.:

Isabellas,	No mildew.
Concord,	Badly mildewed.
Allen's Hybrid,	Very slightly mildewed.
Catawba,	Slightly mildewed.
Clara,	No mildew.
Rebecca,	Slightly.
Anna,	None.
Union Village,	do
Logan,	do
Diana,	do
Clinton,	do
Delaware,	do except in certain locations, and then very slightly.

Although both bunch and berry are small, yet the flavor is so fine in the Delaware that I put it ahead of all those in general cultivation.

The Asparagus beetle has made a finish of every thing about here. Beds all destroyed. Yours truly, J. T. T.

[The above is a model report in its way; brief, and to the point. We should be glad to have many more such. Your account of the Asparagus beetle agrees with those received from many different quarters. Nothing, we fear, but absolute and wholesale killing will subdue them. It was not till we called attention to the subject that many discovered that this pest had already begun its work of destruction on their Asparagus beds.—ED.]

GENTLEMEN,—Having built a house for the cultivation of peaches under glass, without artificial heat, I would trouble you for directions how to select and dispose

of the trees. The house is like an ordinary lean-to cold grapery, length 40 feet, length of sash 12 feet, height of front wall 2 feet, of back wall 9 feet. The trees are to be planted and trained under the glass like vines in a grapery.

The question is, What should be the length of the trellis for each tree, supposing its height to be 12 feet, and which form of espalier, the *fan-shaped* or the *square* is to be preferred.

Of the two, three, or four trees to be admitted, I wish one to be a nectarine, and suppose the Stanwick or the Red Roman, and the Monstrous of Douay, the Late Admirable and the Grosse Mignonne, to be the best varieties of the two fruits.

I have also some difficulties to refer to you, in the training and pruning of the Blackberry and the Raspberry. Some weeks since I pinched the tops of the former, and some of them now have side branches 3 or 4 feet in length, and upon these, again, laterals. I wish to know what treatment these different parts should receive at the fall and winter pruning, and how much of this pruning may be anticipated by frequent summer pinching or pruning to prevent the bushes from becoming a tangled mass of briers; what number of canes should be left to each stool, and, if trellises are preferable to stools, what should be the disposition of the canes along the trellis, and the distance between each two of the former. Also, in regard to the Raspberry; often all the strong canes of a stool are divided from near the ground upward into several strong branches; are such canes as good as single ones, and how are they to be managed? Have I done violence to my Raspberry vines in thinning out this summer the canes to 4 or 5, in shortening the other, and cutting the small laterals to two eyes.

The past spring I planted a Honey Locust hedge, setting the plants thus .·.·.·., two to every foot in length of hedge. Should they not be thinned out to one plant to every 2 feet of hedge? The plants having already made a growth of from 1 to 2 feet in height, when and how much should they be pruned?

In a former number you advised me to plant Delaware grape vines 4 feet apart. I planted last spring 15 or 20 of them as you directed, and now await directions how to cover the trellises, expecting to cut them back to three eyes this fall, and the next, if necessary. The laterals have been kept pinched to one new leaf as you direct, and the canes are, most of them, from 4 to 6 feet high, and $\frac{1}{4}$ inch in thickness; the young shoots of those which are now the highest, having been all cut down by the frost of the 25th of May. The leaves, however, are more or less affected as this Isabella which I inclose. Is it mildew?

The inclosed leaf of a cucumber tree is a specimen showing the blight which has covered the foliage of a tree on the lawn, and attracted an army of flies. The branches also are black, and covered with tubercles, which seem to be formed by an insect called by some the coccus. Is there any remedy for this but to destroy the tree, or leave perhaps a young sucker in hope of its making a thrifty growth?

Hoping to receive soon a reply to this rather formidable list of questions, I remain, very respectfully, your obedient servant, A SUBSCRIBER.

Owego, August 26, 1862.

[The list is rather formidable to be answered all at once; but we do so cheerfully, but necessarily briefly. The trellis for your trees should be continuous, reaching the whole length of the house, and some three feet from the glass; not more than four. We like the fan-shaped espalier better than the square. In such a house, however, we should plant the trees three feet apart, and grow them in what the French call the *cordon oblique* form. The Stanwick is the best Nectarine you can plant. The Red Roman is very fine, and so is the Elruge for your purpose. Your peaches are excellent, but be sure you get them true to name, which is not easy. Topping Blackberries is a good practice, but you either topped yours just a little too soon, or probably pinched the ends of the branches. The topping is done to produce strong side branches, but we do not want laterals on these. The side branches must be cut in to about three feet, if very strong; if not, to two feet, or even one, according to their condition. If there are laterals on the side branches, cut them in to two buds. Leave three canes to each stool, unless the stools are very wide apart, in which case four may be left. This will constitute your fall or winter pruning. The old canes will all be removed, of course. The plants should stand from three to four feet apart in the rows; not less than three. The Blackberry needs no summer pruning, except pinching off the top of the leading shoot. A trellis is no doubt the best arrangement for Blackberries. The three shoots should be tied out fan-fashion. If a trellis is not used, tie out the shoots to poles. Raspberries, when growing strongly, will often throw out side shoots; and there is no objection to this, provided they are strong, for the quantity of fruit is thus increased. These side shoots, at the winter pruning, should be cut in to from six to twelve inches, according to their strength. For neatness, we prefer a single stout cane. You did perfectly right in reducing the number of canes; four or five are quite enough to leave; the others should be cut entirely out, not shortened in. This is the only summer pruning the Raspberry needs. The distance at which you should leave your Locust plants will depend upon the height you wish to give the hedge. You may in any event thin them out to the distance proposed. Cut them down next spring to about four inches. We are glad to hear that you planted the Delaware, as we suggested. Cutting back to three eyes will be your pruning for this fall. Our Hints on Grape Culture will keep you thoroughly posted in regard to covering your trellis. Read them carefully from the beginning. The leaf of Isabella you sent is covered with mildew. The other leaf sent looks as if it were entirely covered with soot on the upper side. The texture of the leaf seems to be but very little injured. We do not remember to have seen any thing like it before. We dislike very much indeed to de-

stroy a fine tree. We should wash the tree with a strong solution of soft soap. We know of nothing better. If that failed, we should cut the tree down. We hope these answers to your questions, though brief, will be of some service to you.—Ed.]

P. B. Mead, Esq., Dear Sir:—I have inclosed to you, by mail, the flower of a shrub which has greatly interested me, the name and botanical status of which I have been unable with certainty to determine. A friend, while at the Isle of "St. Kitts," in 1860, obtained this with other slips from a gentleman there, who had brought his plant from the Island of Madeira. My plant is about three feet high, and has fourteen flowers like the one sent you, of exquisite fragrance and beauty, which I have never in any plant seen excelled. The diameter of the flower sent you, when cut, was five and a half inches, length ten inches. They close during the day, and late in the evening are in their full glory. The bark of the plant is quite like that of the Ailantus. I would gladly learn its name, and have taken the liberty of asking your assistance. I will forward you a cutting if you desire it. Very respectfully your obedient servant, R. M. Lyon.

Bath, N. Y., September 1st, 1862.

[The flower and the cutting came to our office while we were at home very ill. When we finally saw them they were too much shriveled to be identified. We think, however, your plant is a species of Brugmansia. Can you not send us another?—Ed.]

Gentlemen:—Is there really any way of *labeling* trees or plants so as to preserve their names for any *reasonable* length of time, say for three or four years, if no longer? I have tried Patent Indelible Pencils to my great disgust. Your valuable suggestions on this point will be grateful to at least one of your subscribers in Baltimore.

[A cheap and durable label is a great desideratum. There are some good patent labels, but their cost prevents their general use; besides this, many of them must be purchased with the name already on them. If these points are no objection, Bliss's labels possess the other requisites to a considerable degree. A zinc label, written on with prepared ink, is both good and durable. It will last for many years if the ink is good. But the cheapest and most durable label of all is thin sheet lead; it will last an indefinite length of time. It is cut into narrow strips, about three inches long, stamped with a steel die, and rolled around a small branch of the tree to be labeled. It is most convenient to use figures and a memorandum book, in which the names are put down opposite the figures. A wooden label well painted, and written upon while the paint is fresh, will last a considerable time; so also a wooden label, if *wetted*, may be written upon with Dunn's pencil, and relied upon for two years at least; but wood in any form can not be regarded as a durable material.—Ed.]

DEAR MR. EDITOR:—Walking through one of the finest gardens in Northampton, I came across those beautiful specimens of Fuchsias, and I wondered if *you* would not admire them too; so I thought I would send you a bouquet from Yankeeland. The lady who owns this pretty place calls the double Fuchsia the "Zouave," and it grows in *platoons like*, of six and eight. I presume you have some more scientific name. These may not compare with your varieties, but if they can't compete with you in the flower line, their trees will outstrip any thing this side of Eden. Such Elms! such Cedars! such Oaks! and such "whispering Pines!" Why they are glorious in their magnificence!

By the way, have you any contributors for your Magazine in these parts? I saw something about a Horticultural gathering over some store, and should judge from that, Northampton was looking from under the trees into the subject. I have a Cedar which I have had growing (or *standing* rather) for over six years, and in all that time it has not increased in length or breadth, but "still lives!" Can you tell me what will start the tree from its lethargic state? Hoping you will drop me *some lines* telling me how you like the flowers and every thing you know will interest me, I remain yours truly, M. J. E.

Northampton, August 12th.

[The Fuchsias in your note were well pressed and dried. The *Zouave* would not be an inappropriate name for a Fuchsia producing its flowers in "platoons," and we must give your lady friend credit for a vivid imagination. The name of the plant, however, is Sir Colin Campbell, a warrior, though not a Zouave. We have some fine trees here; but as you say yours will "outstrip any thing this side of Eden," and we feel doubtful about claiming so much for ours, we must yield you the palm and avoid comparisons. We have no special contributors at Northampton, but would like to make you one, since you seem so alive to the beauties of Nature. You should have gone to that horticultural gathering, and made all the people subscribe to the HORTICULTURIST; it is indispensable to all gatherings of the kind. They could not have refused a lady. Your Cedar, we suppose, is the common red Cedar, noted for its slow growth; it does pretty well when it "holds its own." We can not well advise you what to do without knowing the conditions under which it is growing. Suppose you mark a circle around it six feet in diameter, loosen up the soil, and keep it free from weeds for a couple of years. We should be very glad to write something to interest you. We hope you may find something in the present number that will.—ED.]

FRIEND MEAD,—Having had my attention turned into a horticultural channel for the past few years, particularly to that part of it called grape culture, I have been not a little interested in the perusal of those articles entitled "Hints on Grape Culture," as given forth in the HORTICULTURIST. It is, I find, a demonstrated fact, that time works important changes in every department of science,

whether mechanical, agricultural, or horticultural. And I doubt not but there are now many Fox Meadows in the horticultural world, that are diving deep, and examining well the superstructure and foundation upon which all their "future hopes" and success in grape culture are to rest. For myself, I can say that I am only very young, and need all the collateral information that is stored up in the garner of experience. Dear Friend Editor, provoke Fox Meadow to continue his "Views," and also give some of his brethren a "sly poke," reminding them of their duty, to set their lights on a hill, and not keep them under a bushel. However, I must say, notwithstanding my inexperience, that I have a grape border in which I planted twenty grape vines about seventeen months since, from which I have gathered a sufficiency of grapes to create an "earnest" for the realization of my most confident expectations. The varieties that produced fruit in this border this season, are Concord, Hartford Prolific, and Diana. Several of my Concords have made an aggregate of over 30 feet of wood this season, being grown mostly with two canes. Hartford Prolifics have grown equally well. One Diana vine has reached the height of 20 feet with one cane; between 12 and 15 feet with another; canes stout and vigorous. No fruit of the Delaware this season; one vine has made 30 feet of wood in two canes; they are both very stout, short jointed, and wiry. My border was prepared not at all after the specifications and details of Friend Olapod, but how I leave for the present, hoping to resume the subject at some future time. FEBRIS VITIS.

Shrub Mount, 9th month, 11th, 1862.

P.S.—Please answer in the HORTICULTURIST the following queries, and oblige thine truly. Viz.: 1st. Will there be any advantage in layering the vines above spoken of, say about 2 feet, putting 1 foot each year for two years? The border was constructed with a view of layering them. I do not know but Fox Meadow is going to turn my cart over. 2d. What are the characteristics of the Creveling, Bloom, or Catawissa grape, that recommend it? We are glad to hear that those "Hints" are to be continued.

[We are glad to hear from you. You seem to have made a very good beginning in grape culture, and your "earnest" will no doubt be crowned with abundant success. We should not advise you to prepare a border as suggested by Olapod. Fox Meadow's articles are worthy of attention. They will be continued till the border is made. How much farther we can not say at present, but we hope and believe he will make his "Interior Views" full and complete. We should not layer the vines unless there was some real necessity for it. If you do, however, put down a foot at a time, and begin before the vines are another year old. The Creveling is recommended for its hardiness, earliness, and good bearing qualities. It is, moreover, a good grape. We should be sorry to drop the "Hints" now, except to our readers. We shall continue them to the end, with the hope that some may fall on good ground, and produce much fruit. Let us hear from you again about grapes and other matters.—ED.]

PETER B. MEAD, ESQ.—*Dear Sir,*—I wish to inquire if you know of a remedy for an evil, which, if it continues to increase as it has done for some years, will soon put an end to the culture of the grape in this place.

Last year I noticed a small fly (which has for several years destroyed the foliage on several kinds of ornamental shrubs in my garden) was attacking the leaves of my grape vines. It did but little injury, except to a "Clinton," which it stripped of its foliage, and in consequence the fruit did not ripen.

This year the same pest has appeared in myriads on the leaves of all my grape vines, and has destroyed the most of them to such an extent, that the fruit has ceased to grow, and the crop of course will be lost. I have examined the grape vines of some of my neighbors, and find that they are all suffering, in different degrees, from the same cause. The only kind of grape which is not seriously injured, with me, is the Concord. Although it is attacked in common with the others, its very thick tough leaf does not suffer much, and the crop has ripened well. Of the others, the Rebecca and Delaware are the most affected, the Catawba is next, and the Diana the least of all, but the Concord. The fly which is doing all this mischief is, I suppose, a species of "thrip." There are two kinds on the leaves, one of which, a small fly, less than a quarter of an inch in length, striped crosswise, with three dark and two white stripes, is no doubt the "thrip" of the graperies. This kind, however, is not very numerous. The other sort is smaller, of a greenish white, and is very quick in its movements, flying so briskly, that we have to "look sharp" to see it, although when the vines are shaken they arise in great numbers. I have occasionally had both kinds in my cold grapery, but we easily rid it of them by tobacco fumigations.

Many persons here have gone into the cultivation of the grape, and it is a great disappointment to us to be thwarted by so insignificant a cause, in a pursuit from which we have derived much satisfaction.

If you can prescribe a remedy for us, we will be much obliged. We hope, from your experience in grape culture, and knowledge of the subject in general, that you will be able at once to put us in the way of ridding ourselves of this pest. I fear, however, that it will be difficult to get rid of them. I have already exhausted all the usual means in unsuccessful attempts to drive the same fly off my celery plants, which they have annually destroyed, until I have abandoned the culture of the plant. I have never seen any account of them having attacked the foliage of the grape out of doors in any other place, and fear that there is no established mode of getting rid of them. I would suggest, that if you do not know of a sure remedy, you lay the subject before your contributors, through the medium of the HORTICULTURIST.

I will mention, in conclusion, that we have not had a very good grape season. The Catawbas have rotted very badly. The Isabellas also, but not so much. But the Concords and Delawares have not rotted at all, and the Dianas and Re-

beccas but little. I consider the Concord by all odds the best grape for general cultivation for this region. AN OLD SUBSCRIBER.

Springfield, Ill., Sept. 10th, 1862.

[The flies or thrips alluded to by our correspondent are common all over the country. They greatly disfigure the leaves, and injure them sometimes to a degree that threatens the crop of fruit. There are various remedies proposed, but none that we know of that can be relied upon as effectual. Dusting air slacked lime over the foliage we have found to be the best; but it must be repeated several times. The insect is more or less common every year in this vicinity, but not very often in such numbers as to do material damage to the crop. We have sometimes known a vineyard to be so full of them, that on touching a vine they would fly about and in one's face so as to be very annoying, and even get in one's nostrils and throat. The best thing we can recommend is the air-slacked lime, which may be used in a common dredging box, or a child's drum, elsewhere described by one of our correspondents. Do any of our readers know of any thing more effectual? The Catawba has rotted very generally this season; other kinds not so much.—ED.]

MR. EDITOR:—My grapes were attacked with mildew about the 10th of June; and having seen it published that one pound of sulphur in thirty gallons of water, by syringing the vines with this solution, would stop it, and having no experience on the subject, I made the solution, and used it. In a few days, on examining my vines, I found that wherever the water touched a leaf, it killed it dead. The leaves from the lower part of the vines were all killed and fell off, but every grape that was not affected is now growing, and is as large as the same kind on vines that remained healthy. The vines have again put forth their leaves, and the mildew has not yet appeared again on them. Was the solution too strong, or was the mode of applying it wrong? Yours, etc., D. F. KINNEY.

P. S.—The kind of grape referred to above is Norton's Seedling. Would any other kind be liable to mildew by being grafted on them?

Rock Island, Ill., August, 1862.

[Your case is more or less common among those who use such remedies for the first time. Your solution was evidently too strong, to judge from the effects, though the proportions would hardly indicate that. You would probably do better to use the flour of sulphur sparingly, simply dusting it on the foliage. Sulphur will not dissolve in water alone. Rub the sulphur up with common yellow bar soap, and dissolve this mixture in water, and you will have a much better remedy. A little lime may be added with advantage. You can graft safely as proposed; that is to say, without *additional* liability to mildew, unless the disease has become constitutional in your vines, which we think is not the case.—ED.]

MESSRS. EDITORS:—We seldom have all kinds of fruit so well represented as the present season. It will be an important year to compare varieties, and report thereon. We have yet found no newer Strawberries which we think will supersede the Triomphe de Gand, Jenny Lind, Scott's Seedling, etc., with us.

The peach-blight has made blighting work on our natural fruit trees this spring. The budded peaches are little injured. Our varieties are Yellow Alberg, Early Crawford, Late Crawford, Honest John, Haines's Early, Red Cheek, Hoffman's Favorite, White Rareripe, Early York, Oldmixon Free, Sturtevant, etc. Are the yellows, blight, and curl-leaf the same thing? Is the cause yet known?

On some vines and in some situations the wet weather has started the rot and mildew on our Isabella and Catawba grapes. What is the cause of the grape rot, and the remedy?

E. Fairfield, O. T. AND S. B. MCMILLAN.

[The present has certainly been a very productive fruit season. Apples and Pears are selling at present for a mere song in the New York market, and it is many years since we have seen Plums so abundant. Triomphe de Gand, we believe, sustains its good character all over the country. The yellows and blight are identical, but not the curl. The cause is not well ascertained; but if you begin with healthy trees, enrich your soil properly, and prune systematically and judiciously, you will seldom be troubled with the disease. As it is transmitted by the bud, it is difficult to know whether you have started right or not. All diseased trees should be at once removed. The rot is probably caused by sudden and extreme changes in the weather, accompanied often by cold rains. We know of no certain remedy after it has appeared, but we always remove the infected berries to check it from spreading. Sulphur and other remedies are often successfully used for mildew. A sheltered situation, well-drained soil, and judicious culture are the best preventives. Some kinds of grapes, owing to constitutional causes, are more liable to rot than others. It would require a dozen pages to treat the subject intelligibly.—ED.]

P. B. MEAD:—Please change the direction of the HORTICULTURIST to Hamilton P. O., Loudon Co., Va., instead of Leesburg. We have a regular mail there now, which will be our permanent office. Let us hear from different parts of the country as to the fruit crop and weather occasionally, or often. I like to know how things do every where. Here we had it plenty wet enough until the 20th of July, but now we have no rain since, and the crops, which were all moderately good, or better than they had been for some years, of peaches and apples, are suffering for want of rain; but should the drought not be too lengthy, the winter apples will most likely be fairer than usual, as the spring was much later than usual, and the fall seems to be approaching already, as the past week we came near having a light frost. Peaches will not be as large as usual, being

hurried by a short summer, and drought in the hottest part. Grapes have rotted considerably; the ground was so wet in the spring they set heavy, and since so hot and dry they have rotted more than usual here; and sorry am I to say, most of the Rogers's Seedlings have rotted some, though they had an unfavorable place at the foot of a northern slope, and trained to their disadvantage; but the Concord has rotted quite as bad; also Catawba, and a variety here called the Constantia, a purple grape, better than the Isabella, and much like it. The Diana, Clinton, and Delaware are clear of rot; also the Franklin. With proper drainage, I don't think the Rogers's Seedlings will be more subject to rot than the Concord, Catawba, or Garrigues.

The Ott pear is in perfection now, and is the best eating pear I have known, unless it be the Seckel, which is not ripe here now. I think the Ott will be found to ripen before instead of after the Seckel, when the trees get older; and this will show why they deem it so poor at the West, as their trees are young and thrifty, and do not ripen perfect fruit yet. The Kirtland, now ripe, is not equal to the Ott, nor is the Lodge. I fear but few from the South can attend the Fruit Congress this fall. I have many other things I wish to say, but must stop.

8*th Month*, 21*st*, 1862. As ever, in haste, thy friend, OLIVER TAYLOR.

[We hope that no reverses of our army will render another change in your post-office necessary.—Like you, we are always glad to hear of the weather and fruit from all sections, and we presume our readers share this feeling in common. We too have had a drought of much severity, and on the 2d of September a sharp frost, followed by much heat, and within a couple of days many vines that had up to that time escaped were badly affected with mildew and rot, particularly in low and exposed places. We have noticed a little mildew on two of Rogers's Seedlings; and here we would again repeat our opinion, that no grape vine, under certain conditions, can claim immunity from it. Certain kinds will be more affected than others from constitutional causes, and it is well to know this. Fruit is very abundant here, but, on the whole, not as fair as usual, especially apples. We are glad to hear your good opinion of the Ott; it is undoubtedly a pear of much excellence. We have seen the Kirtland in great perfection, and think it will be esteemed. Take another opportunity of saying what you have left unsaid now. We are always glad to hear from you.—ED.]

BROOKLYN HORTICULTURAL SOCIETY.—We continue the proceedings of the Conversational Meetings. The following is the remainder of Dr. Trimble's report on Insects injurious to City Trees.

The Trees.—Of the shade trees, the Lime or Basswood suffers most, but the Elm, Weeping Willow, some varieties of the Maple, the Horse Chestnut, and some other kinds, are also more or less involved. And although the span worm

will feed upon the leaves of almost every tree, it seems in most cases to be from necessity and not from choice. The eggs of the span worm are seldom found upon the Ailantus, the Catalpa, Paper Mulberry, the fruit trees, and never on the Black Walnut, nor that fine shade tree, the American Tulip, (the Liriodendron tulipifera.)

It is often the case, that in planting trees we set out more than are wanted as they increase in size. When they are all permitted to stand they crowd each other out of shape. Often one tree, with a free chance to spread out, naturally will give you more shade, and certainly be more ornamental, than half a dozen that interfere with each other. The thinning out is often neglected too long, from the very natural reluctance to cut down a tree. I do not know that this is the case in your city; but if you have rows of Limes or Elms, where the trees will crowd each other as they become larger, and if you do determine to subdue the worms, now would be a good time to thin out. By cutting them away and burning them while the eggs are upon them, you will diminish the labor immensely. But I do not wish to be understood as recommending that the trees should be cut down to get clear of the worms. I would not dispute the title to such barbarism with your aldermen.

The Parks.—In my investigations of this subject, I have visited most of the Parks of New York, and many of the streets of this city. The Central Park is, like your Greenwood, clear of the span worms. There the birds are protected, with no hawks to kill them, nor crows or squirrels to rob their nests, and they are found in such numbers as to keep all such insects in check.

Of the other Parks, the Washington Parade Ground has the fewest; the keeper here told me that they were nearly gone, and the foliage of the trees showed but little injury. Two years ago this square was as much infested as any other part of New York. The trees on the Battery and in the Park, as well as those in front of the Hospital and about Trinity Church, have all suffered, but all are still shade trees, and not as they have been some years, almost as bare as in winter.

Union Square has suffered most, though some of the trees in Madison Square bear the signs of having fed their full share of the worms. The rows of small sized trees in the streets seem to suffer more than the same kinds in the Parks; there the birds are seldom seen, and probably the parasite flies prefer more protection.

The keeper of the Park on Union Square informed me, that two years ago a flock of four or five hundred Cedar Birds (the Wax Wing) were feeding on the worms for several days in that Park, and he supposes that if they had not been frightened away, they would have taken them all; and when told that the worms in that Square were thicker than in any other in New York, he seemed much surprised. The Cedar Bird feeds chiefly on berries, and these were probably on a marauding expedition to some of the city gardens in pursuit of early cherries,

and merely came among the worms between meals, by way of variety. It is a habit of this bird to be very circumspect when stealing cherries, and to stay about the trees no longer than is necessary. All the testimony I could get from policemen and others both in New York and Brooklyn, seemed to concur with my own observations, that the worms were not more than half as numerous this year as last, and that two years ago—1860—they were the most numerous.

As nothing has been done to destroy them, it becomes an interesting inquiry, as to the cause of this diminution.

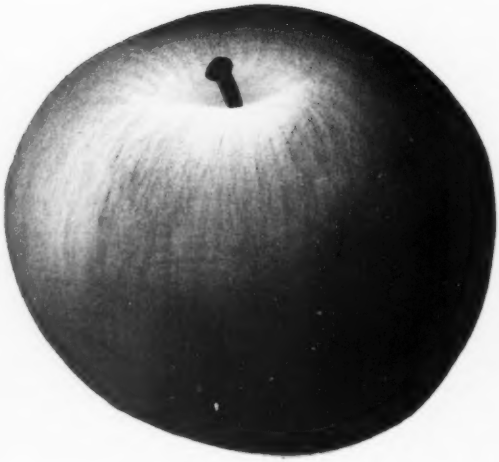
The rate of increase in insect life is generally enormous, and this one is not an exception to the rule. The number of eggs in the clusters left by the millers of the span worm, varies from eighty to two hundred and thirty. In examinations of the eggs deposited last year, every one has a little opening in the end, where the young worm seems to have safely escaped. You have but few of the little creeper birds in your Parks, and found chiefly in winter, that with their sharp beaks peck into and feed upon the eggs of insects. You have never yet had the worms in such numbers as to destroy the foliage of your trees before they arrived at maturity, and thus, from starvation, come to an untimely end, as insects sometimes do.

In theorizing on this matter, I supposed this decrease of numbers was brought about by that class of insects that has in charge the *regulating* of the insect world; and since your invitation, I have taken some pains to ascertain whether the facts will sustain that theory, and have found enough to prove that they do.

As a matter of science these investigations have been to me profoundly interesting. To you, who are so anxious to get rid of this worm pest, it will be welcome news to know that they are likely to aid you greatly in your labors.

As but little is generally known of this Ichneumon or Parasite class of insects, to which we are so much indebted for its controlling power over other classes, it will be well to give a brief explanation before going further.

There is nothing in the other departments of nature exactly corresponding to this class of insects. In the vegetable world, the Mistletoe is a fair illustration of the parasite, but it does not kill the tree upon which it feeds.



THE EVENING PARTY APPLE.

Colored for the Horticulturist.